rnia
l

USE

THE LIBRARY OF THE UNIVERSITY OF CALIFORNIA LOS ANGELES

THE LIBRARY OF THE UNIVERSITY OF CALIFORNIA LOS ANGELES

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

http://www.archive.org/details/textbookonchirop00firtiala

A TEXT-BOOK

— ON —

Chiropractic Symptomatology

— OR THE —

Manifestations of Incoordination Considered From a Chiropractic Standpoint

By

JAMES N. FIRTH, D. C., Ph. C.

Professor of Symptomatology in the Palmer School of Chiropractic,
(Chiropractic's Fountain Head)
Davenport, Iowa

COPYRIGHT, 1914, BY JAMES N. FIRTH, D. C., Ph. C.

1914
DRIFFILL PRINTING CO.
ROCK ISLAND, ILL.

BMED
WB
905
F519t
1914

PREFACE

Upon accepting the chair of Symptomatology in *The Palmer School of Chiropractic,* Davenport, Iowa, I found it difficult for students and others seeking Chiropractic information on diseased conditions to obtain a comprehensive idea of such when they sought their information in medical text-books. That is, they were able to find an accurate description of the pathology and its accompanying symptoms, but were unable to apply the Chiropractic idea or philosophy to such conditions.

The aim of this volume, as indicated by its title, is that the student, practitioner and layman may obtain a concise, yet comprehensive, explanation of incoordinations from a Chiropractic standpoint. This volume is exclusively devoted to the subject of Symptomatology and should not be considered as an authority on philosophy. Many of the theories advanced here have been derived or suggested from Dr. Palmer's works on philosophy, which are the only works published on that subject.

It is very essential that the introductory chapter and the chapter on preliminary considerations be read and studied first, as therein are contained the fundamental principles upon which subsequent deductions are based.

It is hoped that this volume may be useful to the student, practitioner and layman.

JAMES N. FIRTH, D. C., Ph. C.

CONTENTS

Introduction.....Sec. I.

Preliminary Considerations.....Sec. II.

The Acute Febrile Diseases.....Sec. III.

Diseases of the Digestive System.....Sec. IV.

Diseases of the Respiratory System.....Sec. V.

Diseases of the Circulatory System.....Sec. VI.

Diseases of the Blood and Ductless Glands..Sec. VII.

Diseases of the Kidney.....Sec. VIII.

Diseases of the Nervous System.....Sec. IX.

Constitutional Diseases.....Sec. X.

The Intoxications and Sunstroke.....Sec. XI.

List of Abbreviations Used.

At.—Atlas.
Ax.—Axis.
C.—Cervical.
M. C. P.—Middle Cervical Place
L. C. P.—Lower Cervical Place.
A. P.—Arm Place.
H. P.—Heart Place.
Lu. P.—Lung Place.
Li. P.—Liver Place.
C. P.—Center Place.
S. P.—Stomach Place.
L. S. P.—Lower Stomach Place.
Spl. P.—Spleen Place.
K. P.—Kidney Place.
P. P.—Private Place.

Symptomatology From a Chiropractic Standpoint.

SECTION I.

INTRODUCTION.

"You do not know enough the moment you believe your education is over. You cannot teach after you stop learning. No allegiance is paid to inefficiency. No matter who you are or what you do—doctor, lawyer or merchant—your guidance will be deserted, your counsel avoided and your wares rejected in the face of better brains or brands."

THE NERVOUS SYSTEM.

In the consideration of the nervous system it might be well to begin at the beginning, its development in the embryo. An ovum is a single animal cell about 1-125th of an inch in diameter, and is secreted by the ovary, an organ of the female. It is surrounded by a membrane and contains a nucleus called the germinal vesicle, within which is the nucleolus or germinal spot. The spermatazoon is an elongated animal cell which is secreted by the testicle, an organ of the male, and consists of a head and a tail. Fertilization occurs when the spermatazoon meets the ovum and works its way through the viteline membrane, whereupon the cellular elements of the two cells become thoroughly fused, the product of this fusion being called the blastoderm. This blastoderm begins enlarging and its cells multiplying or increasing in number until shortly it is found that these cells are arranged into three layers. These are known as the embryonic layers, primary membranes or layers of the embryo. The outer layer is called the epiblast, and from it is developed the skin and nervous system. The inner layer is called the hypoblast, and from it is developed the mucous

membrane of the alimentary tract, while the middle layer is called the mesoblast, and from it are developed the bones, muscles and main bulk of the body.

If all of these various tissues derived from the three embryonic layers are closely examined and classified it is found that they belong to four different groups, because they are composed of four different kinds of structures. They are known as the elementary tissues and are called epithelial tissue, connective tissue, muscular tissue and nervous tissue. This nervous tissue is the most delicate, most sensitive and most highly developed tissue in the human body. The greater portion of this nervous tissue is located in the cranium, and is called the brain. This brain is composed of two kinds of matter—gray and white matter. The white matter is arranged on the inside, or forms the center of the brain, while the gray matter is arranged on the outside, forming the convolutions. There are millions of nerve fibres arising from this mass of nervous tissue, called the brain, most of which converge toward the base of the skull and form the spinal cord, which is, in fact, but a prolongation of the brain. In the spinal cord, however, the arrangement of the gray and white matter is the opposite to that of the brain. In the spinal cord the gray matter is arranged in the inside, forming the anterior and posterior horns or cornu, and the white matter is arranged on the outside in the form of tracts, as different parts of it are called. The spinal cord passes down through the neural or spinal canal, and on its way down gives off the spinal nerves. These spinal nerves are given off in pairs and are 31 in number. The cord proper ends at a point opposite the first lumbar vertebra. It then becomes flattened and spreads out into what is called the Cauda Equina (horse's tail).

After having passed through the sacrum there are only two small filaments or fibres of the spinal cord left, each of which is attached to the cornu of the coccyx and forms the filem terminale.

The spinal nerves make their exit from the neural canal between the vertebrae, through small openings called intervertebral foramen. After passing through the intervertebral foramen they divide into an internal and an external division, which again divide and sub-divide until small nerves are distributed to all parts of the body, there being no part that you can prick with a needle without producing pain, showing the density of nerve distribution.

The next question that arises is, what is the use or function of all these nerves, spinal cord and brain? The answer of which we all know in a more or less vague way. But before answering this question let us look at man in a different way.

A real live man does not consist of only matter—that is, bone, flesh and blood. There is something more that makes this man alive, that actuates his every action, that causes his heart to beat, his lungs to breathe, his stomach to digest, his bowels to function, his kidneys to excrete, his glands to secrete, etc.; this something is called force, mind, instinct, intuition or Innate Intelligence. It is something not tangible, something that you cannot see, taste, hear, smell or feel; nevertheless, we must all admit its presence or existence—the existence of mind (Innate Intelligence).

The seat of the mind is the brain, and it is there that all impulses are generated. The impulses are transmitted over the spinal cord and nerves to all parts of the body, where they are expressed as life. Therefore the mental impulse is essential to life.

This mind is of different kinds, or is considered in different ways. There are mental faculties over which we have control educationally, and in a general way may be spoken of as the educated mind; but in my estimation it is only the expression of the Innate mind in certain portions of the brain which gives rise to the mental faculties, such as perception, memory, reasoning, etc.

There is also what you may call brain force, mental force or instinct, but throughout the following pages we will speak of it as Innate or Innate Intelligence, and it is this force that has to do with the development and growth of the body. This is abundantly proven both by experiment and by accidents that have occurred. We know that when the spinal cord is severed in the cervical region that instant death is produced, while severing the cord in the lower part of the spine produces death to the body below that point.

On the other hand, when we place our fingers in contact with any substance, we have a sensation by which we tell whether the object is smooth or rough, hard or soft, hot or cold, round, square or oblong. In this instance we get an impression from the object by touch, getting the impression on the tactile corpuscles in the fingers. These impressions are carried by the spinal nerves and spinal cord to the brain, where they are interpreted. The interpretation is referred back to the ends of the fingers, so that it appears to us that we are feeling with the tips of the fingers; however, the sensation really takes place in the brain.

There are different sets of nerves, one set which conveys impressions from its periphery to the brain and are called afferent. The other set conveys impulses from the brain to the periphery and are called efferent. The electrical analogy is very often used in explaining Chiropractic.

The dynamo generates electricity which runs the motor. This electricity is conducted from the dynamo to the motor by a wire called the positive wire, so called because it conveys current from the dynamo. The current is returned to the dynamo from the motor through a wire called the negative wire, so named because it conveys current to the dynamo. It is necessary to have this complete material circuit before the electricity can be utilized in running the motor, and it is the same in the human body. The brain corresponds to the dynamo, the efferent nerves correspond

to the positive wire, the tissues to the motor and the afferent nerve to the negative wire. It is necessary not only to have a complete material circuit through which the immaterial works, but it is also necessary that there be unhindered transmission of this immaterial over the material circuit. For example, you have the brain sending out mental impulses which pass over the efferent nerve to the stomach, where they are expressed in the function of digestion. That is, the brain furnishes the stomach with its power with which it carries on digestion. The afferent nerves in the stomach are constantly taking up impressions from the stomach which they conduct to the brain for interpretation, which gives to the brain information of what is occurring in the stomach and the quantity and quality of impulses needed to carry on this process normally.

Now, should this nerve passing to the stomach become pressed upon or impinged at the point where it leaves the spine by a slightly displaced vertebra, the transmission of the impulses or function of the nerve will be impaired, and the stomach will fail to receive the proper amount of force with which to perform its function of digestion. This, then, would be called indigestion, and could only be corrected by relieving the impingement at the intervertebral foramen by proper adjustment of the partially displaced or subluxated vertebra.

The product of the activity of the mental impulses in the human body is called metabolism. Metabolism is defined as the tearing down and building up process of living material, and consists of two parts—anabolism and katabolism. Anabolism is the building up process of living material and katabolism is the tearing down process of living material. There is a combination of three things necessary to carry on this process. We take food in the mouth, masticate it, mix it with saliva and swallow it, it passes into the stomach, where it undergoes gastric digestion, then the portion still remaining undigested passes into the small intestine, where it undergoes intestinal digestion. After

it has been thoroughly digested it is ready for absorption, which occurs by it passing through the mucous membrane by a process of osmosis; after this it is carried to all parts of the body, and it is necessary that this food be in all parts of the body in order to carry on a process of metabolism. Secondly, it is necessary that we have a supply of oxygen in all parts of the body at all times. This is obtained through the process of respiration. The lungs are so constructed and the blood is so composed that oxygen is taken from the air and carbon dioxide is given off from the body to the air in exchange. The red corpuscles of the blood contain a substance called haemoglobin, which give to the red cells their color, and this substance has an affinity for oxygen. This is the oxygen carrying agent of the blood. The blood is carried by the systemic vessels, and they are distributed to all parts of the body by a fine network of capillaries. Thirdly, mental impulses are essential to metabolism, for it is the mental impulse that causes the oxygen to unite with the food, transforming it into living material, of the kind normal to the organ in which the metabolism occurred. If there should be a lack of this mental impulse, then there would be deficient metabolism.

The kind of disease produced depends upon the quantity, quality or combination of abnormal expression of function that occurs in the part diseased, for it is found that different nerves convey mental impulses which, when expressed, give rise to different functions. There are certain nerves that have to do with the motor function, involving the tonicity and movability of muscle. There are other sets that have to do with the sensory function. Still other nerves called trophic nerves, which have to do with the nutrition. Summing them all up, we find that there are nine primary functions. Every disease, regardless of its character, can be analyzed as an abnormal expression of one or some combination of these nine functions. For example, you may have a case of flaccid paralysis of the arm, showing an abnormal expression of the motor function. A numbness of the fingers,

showing an abnormal expression of the sensory function, or you may have a chilliness of one arm, indicating an abnormal expression of the calorific or heat-producing function. And as you will see in future pages, all diseases can be similarly analyzed.

The nine primary functions briefly defined:

1. *Motor.*—That function which has to do with the tonicity of muscle fibres.

2. *Calorific.*—That function which has to do with the production of heat in the body; the heat-producing function.

3. *Sensory.*—That function which has to do with sensation or feeling.

4. *Secretion.*—That function which has to do with the formation or transformation of fluids by glands in the body.

5. *Excretion.*—That function which has to do with the elimination of waste material or valueless substances from the body.

6. *Nutrition.*—Also spoken of as the trophic function, which has to do with the building of living material; that function which takes part in the process of anabolism.

7. *Expansion.*—That function which has to do with the growth of new tissue or the formation of new cells. (Practically the same as nutrition.)

8. *Reparation.*—That function which has to do with the rebuilding and replacing of worn out or exhausted cells with new cells.

9. *Reproduction.*—That function which has to do with the propagation of the species, the principle site of this function being in the generative organs.

Diagnosis is the conferring of a name upon a group of symptoms, and indicates a given pathological condition. A pathological condition is a diseased condition, and knowing

that disease is the result of an abnormal expression of function, it then can be determined what function or functions are abnormally expressed and an equation can be formed for the disease. An equation is an expression of equality, and can be best illustrated in this connection by taking an example.

We have the blood, composed of red and white corpuscles and serum. From our study of physiology and anatomy we learn that this blood is normally found only in the blood vessels, and that the walls of these blood vessels are composed of minute muscular fibres. These fibres are arranged in three layers, longitudinal, transverse and oblique. These muscular fibres are held closely together by connective tissue and have a certain degree of tonicity or elasticity, which tends to prevent the blood from escaping through the walls of the vessels. In a given case we have the diagnosis of epistaxis, or nose bleed, in which condition the blood has escaped from the blood vessels in the mucous membrane of the nose. Ordinarily we say the blood vessels have ruptured, and most of us have but a vague idea of what constitutes a rupture. The vessel wall is not torn nor destroyed in any way, but there is a marked relaxation of the minute muscular fibres which permits them to separate, thus allowing the blood to ooze out between the relaxed fibres. Just so long as there is 100 per cent of the motor function expressed in all muscular tissue, then there is the proper degree of tonicity in all muscular fibres, but if there should be an impingement upon the motor nerves which emit from the middle cervical region and are distributed to the capillaries of the nose, thus causing an expression of this function below par or normal, then there is relaxation. If the relaxation is slight, then there is merely congestion, or hyperaemia; if the degree of relaxation is greater, then there may be stasis, and if the degree of relaxation be very great, then there is prolapsis and separation of the muscular fibres, with a resulting hemorrhage. Then, we can say that nose-bleed is simply an abnormal expression of the motor function,

and its equation is motor minus. Similar equations can be formed for other conditions and will be explained in connection with each disease.

In case of tactile anaesthesia of the hand, or a loss of sensation of the hand. The cutaneous surface of the body contains little organs, called end organs, in which the sensory nerves terminate. These end organs of the finger tips are called touch corpuscles or end bulbs and are the parts which come in contact with the stimulus. A stimulus is an external agent. These end organs receive impressions from the stimulus which are transmitted over the afferent nerve to the brain, where they are interpreted, and through the interpretation we get the knowledge as to whether the object is smooth or rough, hot or cold, round or square, etc. The sensation is then referred back over the sensory efferent nerve to the part receiving the stimulus, which makes it appear that the sensation occurred in the fingers. Should there be a subluxation of the first dorsal vertebra, impinging these sensory nerves and preventing their normal function, there will be anaesthesia, and the equation will be sensory minus.

Should the kidneys fail to properly eliminate the urine and should it be retained in the body, it will produce a dropsical condition because of decreased excretion. In such a case the equation is excretion minus. Likewise, an atrophied arm is the result of depraved nutrition, and its equation is nutrition minus.

Now there are many conditions in which there may appear to be an excess expression of function, such as fever, tremor, polyuria, etc.

Function is the expression of the mental impulse in the cell. Mental impulses, however, are something that cannot be measured. We have instruments for measuring the tonicity of muscles, for registering the blood pressure, etc., but as yet there is no instrument which will measure the mental impulses passing over a nerve or measure the vitality

of a patient. We know there are times and we know there are conditions which, upon observation, appear to be the result of an excess amount of function. For instance, we know that fevers do appear, and fever is any temperature above 99.5; and we know that in fever there is an excessive heat in the body. We know there are times when the muscles are abnormally tense, or in a condition of hypertonicity; we know there are times when the glands become enlarged from overgrowth of tissue. Then the question arises, is this excessive heat produced by an excessive quantity of mental impulses—that is, more than 100 per cent of mental impulses passing over the nerve and being expressed in all parts of the body? Is this muscle contracted because of the expression of more than 100 per cent of motor impulses?

We also know that this fever or excessively high temperature, that this muscular hypertonicity and that this tumorous growth can be restored to normal through Chiropractic adjustments, as it has been done in the past; therefore we know that the cause of trouble is the vertebral subluxation. In other words, we know there is a vertebral subluxation that is producing pressure upon the nerves and thereby interfering with the expression of the calorific function and producing fever; we know there is a vertebral subluxation producing pressure on the nerves, interfering with the motor function, thereby producing the hypertonicity of the muscle; and we know there is a vertebral subluxation producing pressure upon nerves and interfering with the expression of the function of growth, thus producing the tumorous condition of the thyroid gland, known as goitre. Further, we know that in each of these three instances adjustments have been given and have restored the conditions to normal. That in itself is sufficient proof that the vertebral subluxation is the cause of excessive expression of function.

The question still arises as to how can the vertebral subluxation produce excess expression of function when in other cases it produces a lack of function. Whatever answer

may be given to such questions is purely a matter of theory. Mind is something immaterial, cannot be measured and cannot be considered in the same way as matter, therefore it is necessary for the mind to deviate slightly from materialism and look at the question broadly. It is not necessary for the student or reader to accept any of the theories presented here in order to adopt the Chiropractic idea as applied to the various diseases in future pages; in fact, it is much better for the practitioner to reason for himself and to formulate such theories as are satisfactory to his mind rather than to accept the theories as set by others, for many minds are more capable of reaching a satisfactory conclusion than any one mind.

At one time the flimsy theory was held that a heavy pressure upon a nerve deadened or paralyzed that nerve so that it was incapable of carrying impulses, and as a result there was a lack of function in that part to which such nerve was distributed, but a light pressure which might only irritate the sheath of the nerve trunk would, because of such irritation, become over stimulated and cause excess function. If this theory were true it would be necessary to have a medium pressure in order to have normal function, and this could not be, for normal function is carried on only under normal circumstances, and it is not normal to have pressure of any kind on the spinal or other nerves.

The theory has been offered that if the afferent nerve be impinged the brain will be unable to receive the impressions from the tissues, and will thus be unable to properly regulate the supply of mental impulses to the part according to the demand made by it. Hence at times when the organ is at rest and not working the demand for force is slight, and yet a large and over supply of impulses may be received, which when expressed gives rise to excess function of the part, while at other times when the organ is busily engaged at its normal work it fails to receive the normal supply of impulses with which to carry on this work at the required rate of speed. This theory may have some weight

in explaining the intermittency of some diseases, but does not satisfy the production of excess function.

Another theory that has been frequently mentioned is that all apparent excess function is only comparatively so because of a lack of other functions. That is, in order to notice no defects in a part of the body it is necessary to have all functions expressed in a normal ratio, so that the calorific, secretory, nutritive, etc., be all equal. Now if the local subluxation should impinge all the nerve fibres except those carrying calorific impulses and the calorific impulses go along unhindered and be expressed in the part, it will result in excessive heat. This theory may be carried much farther, but this will serve to set you thinking along this line, which is all that is intended.

As a fourth theory, which closely resembles the preceding one, we will take an example for illustration. The thyroid gland is a ductless gland which forms an internal secretion which, hypothetically we will say, is one pint when the gland is receiving 100 per cent of mental impulses of all the nine primary functions. In order to carry on this secretion it will require the life of a certain number of secretory cells, for in all organs tissue cells are becoming exhausted and have to be replaced by new cells. As long as the thyroid gland receives 100 per cent of mental impulses of each of the nine primary functions, the development, multiplication and growth of these cells is carried on at a rate that will keep the quantity of secretion at one pint in 24 hours. Now suppose that the individual should receive a subluxation at L. C. P. and produce a pressure upon the secretory nerves to such an extent that the secretion is diminished to ¾ of a pint in 24 hours, then less cells will be utilized in the total secretion. In other words, it would not require nutrition, expansion, reparation and the other functions to be expressed at the same rate of speed as when the gland was secreting one pint; that is, the less work the less is the force required. However, because of the local subluxation, adaptation is not permitted to take place, and

the multiplication, growth and nutrition of the new cells is carried on at the former rate, while the cells are not being used as rapidly. The result is that these surplus cells will accumulate, because they are being formed faster than they are used, and in time will form an enlargement of the gland, which is commonly called "goitre." This theory may be true in many instances and may even hold good in all tumors, yet there are many other instances of excess function where it cannot be applied.

Lastly, we know that bodily growth and health depends upon the normality of metabolism, which is governed by the expression of mental impulses in all tissues of the body. This being true, excess function is the result of abnormal metabolism in some part, and the manner in which it is abnormal may depend upon the function involved, the degree of pressure and the organ in which the abnormality exists. For example, take a case of simple fever. According to Butler, "Heat production (thermogenesis) depends upon the destructive metabolisms, mainly processes of oxidation, which are constantly going on throughout the body. The skeletal muscles and the glands, especially the liver, constitute the chief seats of heat production."

"Heat dissipation (thermolysis) takes place mainly through the expired air, and by conduction, radiation and evaporation from the skin. As from 77 per cent to 85 per cent of the total heat loss passes off from the cutaneous surface, the skin must be considered as the principle factor in heat dissipation. As the normal temperature of the body varies within such narrow limits, there must be some means of regulating the relative amounts of heat production and heat dissipation in order that they may balance each other with exactness and under widely differing circumstances."

Although Butler further states that the nerve centers, the mode of operation and the paths through which this heat regulation is accomplished is not as yet determined, our results have proven that Chiropractors have at least dis-

covered the nerve paths and their mode of operation to such an extent that a single adjustment will restore the bodily temperature to normal even when there is a very high fever. Accepting Butler's hypothesis to be true, it is only a question of what produces destructive metabolism that remains until the question of excessive heat is settled.

This is again laid to the subluxation basis, that pressure upon nerves prevents the normal flow of impulses to the part, therefore prevents the normal conversion of food into cells, by-products being given off, which, when becoming oxidized, give off abnormal heat. Therefore it does not require more than 100 per cent of calorific impulses to cause fever, for, in fact, according to this theory the calorific nerves themselves might be impinged. Excess function is simply a manifestation of abnormal chemical action within the body, such chemical action being directly controlled by Innate Intelligence when permitted to do so, or when there is no impingement upon the nerves which would hinder this control.

Proper adjustment relieves the pressure on the nerve, permitting the normal transmission of mental impulses, which produces normal metabolism and normal chemical action as a result.

During the process of adjustment, however, the pressure is removed, but gradually. This would change the character of metabolism each day or each time the pressure was altered, which in turn would alter the character of the symptoms. Many would expect that as the pressure is reduced the symptoms will ameliorate and disappear, but, as a matter of fact, they only change in character. Oftentimes a most severe pain will occur when there is but very slight pressure, or a temporary paralysis may exist when there is but very slight pressure; thus, as the subluxation is adjusted the condition which it has caused may be so changed as to give rise to more painful symptoms, which, of course, are only temporary. This change in the charac-

ter of the symptoms, due to a change in the pressure on the nerve, is called "retracing."

Retracing is a question of philosophy, and is thoroughly discussed in Dr. Palmer's works on that subject. Herein is but briefly outlined the fundamental principle upon which it is based.

Then, again, many patients take adjustments a long time before observing any results, and wonder why it is that others get immediate relief while their personal case responds so slowly. This is a question that confronts every Chiropractor, and the answer depends largely upon a personal knowledge of the case. But in the great majority of cases the momentum of disease should be given thought, as therein is contained an ample explanation, even though the case be of short duration. After a disease has started and acquired a certain momentum it cannot be stopped immediately, any more than a railroad locomotive will immediately stop when the throttle is closed. In the case of the locomotive, the momentum which it has acquired in its run must first be overcome, then it can be brought to a stop. In the engine of disease the same is true; it may require many adjustments in some cases to overcome this momentum before the progress of destruction can be checked, after which the metabolistic process will become constructive and the patient will notice improvement. For further information on the momentum of disease see "Chiropractic Philosophy," by Dr. Palmer.

THE MERIC SYSTEM.

The spinal cord arises from the brain and passes downward through the neural canal of the spinal column. As it passes downward it gives off spinal nerves in pairs, 31 in number, which are distributed to all parts of the body. After prolonged experiment and manifold clinical observations, the meric system has been established. The meric system is a classification of the zones, and a zone consists

of one of the segments of the spinal column, together with the pair of spinal nerves emitting superior to this segment and all tissues to which such nerves are distributed. For example, the sixth zone comprises the sixth cervical vertebra, the sixth pair of spinal nerves and all tissues to which this pair of nerves is distributed. For convenience the zones are subdivided into smaller divisions called the meres. A mere consists of all of any one given kind of tissue in a zone; for example, the first neuromere comprises all the nerve tissue in the first zone, the eighth ossimere consists of all the bone in the eighth zone, the tenth vasomere is all the blood vessels in the tenth zone, the dermamere is all the skin of a zone, the myomere is all the muscular tissue of a zone, the viscemere is the viscera of a given zone, and the vertemere is the vertebra of a given zone.

The meric system is only approximate, however. When we speak of an organ as being in the 4th, 10th or 18th zone it is only approximately so, because of the slight variations that do occur in the body. For example, you may find a severe case of liver trouble, and by adjustment of Li. P., or the 4th dorsal vertebra, results may be obtained, but in two other identical cases the 4th dorsal vertebra may not be subluxated, therefore would not be adjusted. Upon careful palpation it is found that the 3rd dorsal vertebra is subluxated in the one case and the 5th dorsal vertebra in the other case, and after adjusting these 3rd and 5th dorsal subluxations the patients recover from the trouble. This is because the nerves leading from the brain to the organs of the body do not follow the same exact course in every individual. The same is true of the blood vessels, as can be seen in the superficial veins of the back of the hand. In one case we might adjust 4th cervical vertebra for eye trouble, and in another identical case we might adjust the 3rd cervical vertebra and obtain results in both cases. In one case of appendicitis we might adjust 2nd lumbar vertebra and in another case the 3rd lumbar and obtain results in both cases. So rather than stating a specific

vertebra as being the cause of a given effect, it will be spoken of as a region. For example, Li. P. means liver place, and means in the region of the 4th dorsal vertebra, S. P. means stomach place, and will include from the 6th to the 8th dorsal vertebrae, etc. See table in meric system book.

At this point the student should familiarize himself with the meric system.

SECTION II.

PRELIMINARY CONSIDERATIONS.

There are many terms and symptom groups that should be carefully studied and learned before progressing with the real work in symptomatology. This section will be devoted to such work.

Symptomatology is that science which teaches of the manifestations or signs whereby the incoordination is detected.

Chiropractic symptomatology is the science of symptoms considered from a Chiropractic standpoint; that is, when the cause and mode of elimination lies within the Chiropractic realm.

Symptoms may be of two kinds, subjective and objective.

Subjective symptoms are those which can be appreciated by the patient only, such as pain, tenderness, fatigue, headache, nausea, and sensations of weight and bearing down.

Objective symptoms are those which are observable to the eye or which can be detected by some special method of examination. The term physical sign has been applied to those objective symptoms which are revealed by some special method of physical examination. Objective symptoms are pulse, respiration, temperature, posture, color, facial expression, shape of the spine, subluxations in the spine as determined by vertebral palpation, mode of walking, etc.

Pathology is that science which teaches of the abnormal structural changes occurring in disease which are the result of the abnormal expression of function. These may be slight and unnoticeable in some cases, such cases being

called neuroses, in other cases the changes are microscopical, and in others the structural changes are plainly visible to the naked eye.

Diagnosis consists in the bestowing of a name upon a pathological condition which presents a certain group of symptoms. Diagnosis may be direct, differential or made by exclusion.

A direct diagnosis is made when the pathological condition is revealed by a combination of clinical symptoms peculiar to that particular disease and not found in any other.

A differential diagnosis is made by calling to mind all the diseases from which the given symptoms could arise and eliminating them from each other.

A diagnosis by exclusion is made by calling to mind all the diseases from which a certain group of symptoms may arise and proving the absence of all except one which is most strongly indicated.

In Chiropractic a broader term—analysis—is used to replace diagnosis. Chiropractic analysis is the determining of abnormal expression of function, in what way it is abnormally expressed and what causes this abnormal expression, and it is arrived at by symptomatology, vertebral palpation and nerve tracing.

HISTORY OF CASE.

Regarding the history of a case there are four points which must be borne in mind as being of vast importance. They are:

1. *History at childbirth.*—This is important, for many of the so-called congenital diseases are due to vertebral subluxations caused at this time.

2. *History of past manifestations* should be considered, as many diseases have complications. Knowing this we

may be better enabled to recognize the condition and thereby give a more specific adjustment.

3. *History of trauma.*—In obtaining this the Chiropractor should find out the nature of the accident or injury; that is, what part of the body was affected and how the accident occurred. This would show us what part of the spine received the strain from the injury and where we would look for the causative subluxation.

4. *The history of the present illness,* including the date and manner of onset and the progress of the symptoms up to the present time. This will not always assist the Chiropractor in obtaining better results, but will be of value in conversing with the patient and in obtaining his confidence. For example, a patient may have been ill many years, and after having received a single adjustment might expect to be well. Then by knowing the history of the case it would be easy to show him the necessity for added time before seeing such results, as they can only be attained through a process of reparation.

The age and sex are of minor importance, as anatomical structures vary in each, and physiological processes have their own peculiarities. It is well to make out and keep a history and analysis of every patient so that it can be referred to from time to time and the progress of the case noted.

DIATHESIS.

A diathesis is a general or constitutional predisposition to certain forms of incoordinations. This predisposition, however, is caused by vertebral subluxations, which, to a greater degree, are capable of causing the diseases to which the body is predisposed.

Tuberculosis diathesis presents a tendency to tuberculosis and is most commonly found in individuals with long, slender bones, oval-shaped face, bright, pearly eyes, delicate skin and colorings, stoop shoulders and a hollow chest.

The gouty, arthritic or rheumatic diathesis presents a tendency to gout, arthritis or rheumatism, and is marked by a well developed body, a fleshy, round face, thick hair, good teeth, hearty appetite, strong heart, high blood pressure and a tendency to obesity.

The terms fatty, neuropathic, hemorrhagic diathesis are also used in connection with patients of these tendencies, but in no case does the diathesis indicate that the disease some time or other will be present.

CACHEXIA.

Cachexia is a condition of pallor plus sallowness, resulting from the disintegration of the red blood corpuscles, due to malnutrition, and characterized by emaciation, debility and discoloration of the skin.

There are two forms of cachexia that are of importance. They are the cancerous and syphilitic.

Cancerous cachexia develops in the course of cancer of any portion of the body and is marked by emaciation, debility, anemia, and a dirty, yellowish-brown color of the skin, which is most observable around the neck and the angle of the jaw.

Syphilitic cachexia occurs in the majority of syphilitic cases and is marked by anemia of a severe type and a muddy pallor of a yellowish-green tint, which is noticeable in the skin and conjunctiva of the eyes.

POSTURE.

The posture of a patient in bed will vary with various diseases, and although many diseases may have the same posture, it is often of value to know the characteristic postures and what they indicate.

1. The dorsal strong or active posture is a posture of health and does not have any diagnostic importance. In

this the individual lies comfortably upon the back, with legs extended and without any indications of pain.

2. The dorsal inert or passive posture is observed in febrile diseases in which there is great weakness, such as typhoid fever. In this posture the patient lies upon the back, but is constantly slipping down toward the foot of the bed so that he soon acquires an uncomfortable position, which hinders respiration.

3. The rigid dorsal posture is commonly met with in acute diffuse peritonitis. In this posture the patient lies upon the back with both legs drawn up and the thighs flexed upon the abdomen to lessen friction, abdominal tension and pain.

4. The lateral posture, in which the patient constantly lies upon one side so as to favor respiration or comfort in some other way. This posture is commonly seen in unilateral pneumonia, pleurisy with effusion, enlargement of the heart and unilateral tuberculosis. In each case the patient lies upon the affected side so as to permit greater expansion of the unaffected side.

5. Opisthotonus, though not always considered a posture, is found as a characteristic symptom in a few diseases or conditions. It is a position in which the patient rests upon the back of the head and the heels, the trunk being arched forward. It is met with in tetanus, uremia and spinal meningitis.

6. Emprosthotonus is a posture in which the trunk is arched backward, the patient resting face downward upon the toes and forehead. It is found in cerebro-spinal meningitis and sometimes in hysteria.

7. Pleurosthotonus is a posture in which the trunk is arched laterally, the patient resting upon the side of the head and the side of one foot. It is also found in meningitis, tetanus and strychnine poisoning.

8. Orthopnea is the condition wherein there is the necessity of assuming the upright position in order to facilitate respiration. It is found in bronchial asthma, emphysema and heart disease, or in cases of fluid in the pleural cavity.

GAIT.

Every individual has a gait, or manner of progression, which is peculiar in itself or to that individual, but there are also various modes of walking peculiar to certain diseases, and will be considered here.

The ataxic gait is so named because of its presence in locomotor ataxia. The patient walks in a stooped posture with the eyes looking at the feet. The foot is raised unusually high and thrown forward with undue force and the foot is brought down to the ground flat-footed with a stamp. While in the air, before being brought down, the foot wavers as if there is a degree of uncertainty in wisdom of bringing it down. The patient walks with the feet wide apart and is constantly looking at them; this is done for the purpose of supplementing the loss of the tactile sense.

The steppage gait is also called the prancing or high-stepping gait, and is commonly found in infantile paralysis, multiple neuritis and paralysis, due to arsenic poisoning. In this gait the extensor muscles of the foot are the subject of a flaccid paralysis, so that the toes hang downward when the foot is raised from the ground. In order to prevent the toes from dragging upon the ground or from catching upon objects the foot is raised very high and brought to the ground forcibly before the toes can drop, thus the foot strikes the ground heel first. This gait resembles that of a man walking in tall grass, hence its name.

The spastic gait is common in diseases that have a spastic paralysis of the extensor muscles, and is common to spastic spinal paralysis, lateral sclerosis and some other forms of myelitis.

In this gait the legs are firmly extended, the foot is dragged along in a shuffling manner with the toes scraping upon the ground, and in order to permit one foot to pass the other the pelvis is tilted slightly. In some cases the adductors contract, causing the legs to cross, as is seen in Little's disease. In spastic hemiplegia there is a unilateral spastic gait, in which the pelvis is tilted and the leg is swung around in front of the other with the toes often scraping on the ground. This is also called the mowing gait.

Festination is the characteristic gait of paralysis agitans, or Parkinson's disease, and is also called the propulsive gait. In this the body and head lean far forward and the patient walks with short, hurried, shuffling steps, making it appear as if he is being pushed and is about to fall. It is difficult for a patient with this gait to stop suddenly or to turn a corner.

The waddling or goose gait occurs where there is extreme muscular weakness in the thigh and hip muscles, as is characteristic in pseudo-hypertrophic muscular paralysis and muscular atrophy. In this gait the shoulders are thrown backward, the lower part of the spine is in a state of lordosis, the pelvis is greatly tilted, and while thus raised, the leg is brought around and placed upon the ground. When walking the patient swings from side to side in a very noticeable manner.

The cerebellar ataxic gait resembles that of an intoxicated person. The patient walks with the feet wide apart, takes short steps and sways to and fro to such an extent that progression is most impossible. This gait is found in tumor of the cerebellum and disease of the semicircular canals of the internal ear.

PAIN.

Pain is an uncomfortable sensation resulting from the interpretation of impressions arising from an abnormal con-

dition within the human body, or from an external stimulus, which has a detrimental effect upon the body. For example, take a sprained ankle in which the ligaments are stretched. There are sensory impressions constantly arising from this abnormal and sprained ankle. These impressions reach the brain, are interpreted, and efferent impulses sent out to the point from which the impression originated, transferring the sensation to the periphery as pain. The sensation of pain, however, occurs in the brain. This pain is adaptative, so as to prevent further use of the injured part until it can be properly and naturally repaired. Or if the skin should be pricked with a needle, an impression is immediately sent to the brain, where it is interpreted as pain, and motor impulses sent back to the muscles, which causes them to contract and withdraw from the injury. In this the pain is also adaptative.

Pain may be classed as acute and chronic, and varies in intensity from sharp or acute to dull and aching. It may be local or general, according to the condition from which the impressions arise.

Acute pain usually begins suddenly, is of a severe character and indicates an acute inflammatory condition of nerves, nerve-sheaths, serous membranes, synovial membranes or an acute pressure upon nerves without inflammation. Of the former we have good examples in peritonitis, pleurisy, arthritis, appendicitis, cystitis, etc.

Dull or aching pain, as that found in case of a bruise, is found in acute inflammations of mucous membranes, or chronic inflammations of serous membranes. Dull pain is found in pharyngitis, gastritis, tonsilitis, acute catarrh, pyelitis, prolapsed organs and pressure from growths.

Both acute and dull pain may be intermittent or paroxysmal. A dull paroxysmal pain is usually produced by some irritant coming in contact with a chronic condition of some kind, such as food in chronic inflammation of the stomach, or the passage of the fecaes in ulceration of the

intestine. Paroxysmal, acute pain is common in the neuralgias, gastric ulcer, rheumatism, neuritis and the lightening pains of locomotor ataxia.

Gnawing, burning or itching pain nearly always takes place in the mucous membrane lining the abdominal viscera where the sensory nerves are less numerous. It is very characteristic of cancer and may be located in any area in which cancer could appear.

Cramp is sometimes spoken of as belonging to pain, but occurs when there is excessive muscular contraction. Abdominal cramps are most common, and constitute gastralgia and enteralgia, in which there are spasms of the muscles of the stomach and intestines.

In all inflammatory diseases pain is greatly increased upon motion, because the dry and inflamed surfaces come in contact with each other and the friction thus induced produces intense pain.

Diffuse pain, as its name implies, is scattered over the entire body, not being located in any organ. It is common during the initial period of the acute febrile diseases, tonsilitis and rheumatism. When diffuse pain is located in the head it is spoken of as a general headache. Headache, however, may be localized, pointing to local causative subluxations.

A headache located in the forehead or over the eyes is spoken of as a frontal or eye headache, and is caused by a local subluxation in the upper or middle cervical region. A headache located in the region of the temples is called a temporal headache, and is usually caused by an Li. P. subluxation. A headache in the back part of the head is called an occipital headache. It may be caused by an atlas or axis subluxation, but is more frequently caused by a lumbar subluxation. A vertical or sick headache is the result and a symptom of disorders of gastric digestion, and will be relieved by an S. P. adjustment. A headache at the crown

of the head is more rarely encountered than any of the others, and indicates kidney trouble. It can be relieved by a K. P. adjustment.

Tenderness is a sensory symptom frequently met with, and may be defined as pain upon pressure, and although there may be a condition which would cause tenderness if pressure be exerted, yet no abnormal sensation will be felt so long as there is no pressure. It is upon this fact that nerve-tracing is based—nerve-tracing being a method of following the course of tenderness over nerves that are impinged. Nerve-tracing will usually assist in locating the cause of pain, tenderness and headache.

Aside from pain and tenderness there is another classification of abnormal sensation, called paraesthesia Paraesthesia is a perverted sensation or uncomfortable sensation not amounting to pain. The most common paraesthesias are weight or bearing down, coldness, faintness, formication or itching, fullness, girdle sensation, numbness and tingling, precordial constriction and weakness or debility.

The sensation of weight is most commonly found in the pelvis, and is more frequently met with in women than in men. It is symptomatic of prolapsis of the uterus, pelvic tumors or a falling of the abdominal viscera.

The sensation of coldness is present at the beginning of a fever or during the chill stage, but also occurs in a few cases in which the bodily temperature is normal. These are usually diseases of the nervous system, and the sensation only imaginary. It is met with in neuraesthenia, hysteria and chorea.

Faintness or syncope is a feeling of extreme bodily weakness with a cloudiness of the intellect, and occurs from a cerebral anemia. This may be produced either by an H. P. subluxation, in which the heart is affected to such an extent that the brain is not receiving sufficient oxygen to maintain

consciousness, or may be caused by an atlas subluxation, in which the vasamotor nerves of the vessels of the brain are impinged, thus causing a spasm of these muscles and rendering a part or whole of the cerebrum anemic. It occurs in diseases of the heart, in hydrothorax, pleurisy with effusion, or sometimes as a result of great emotion, fatigue or excessive heat.

Formication or itching is a sensation as if insects were crawling upon the skin. It occurs in diabetes, jaundice and skin diseases. General formication is more common in cases of hysteria and neuraesthesia.

The sensation of fullness is most common when the abdomen is distended by gas or fluid, as in gastritis and ascites, or may be present when there is pressure by an enlarged or prolapsed organ.

The girdle sensation is an important and common paraesthesia met with in diseases of the nervous system. It is a subjective sensation of a tight band being drawn around the waist. It is found in locomotor ataxia, creeping paralysis, myelitis and tumor of the spinal cord.

Numbness and tingling may occur in the feet during the initial stages of locomotor ataxia, apoplexy, tumor of the brain, spinal meningitis, neuritis, myelitis and neuraesthenia. It indicates the loss of the sensory function, and the above list is but partial.

Precordial constriction is a feeling of tightness in the chest which is near to the point of suffocation and is met with in those diseases accompanied by intense dyspnoea, such as bronchial asthma, emphysema, angina pectoris, meteorism and heart trouble.

Weakness, or debility, is very common and attends the onset of all febrile diseases and appears toward the close of any disease. It may be especially marked in some diseases, such as diabetes, cancer, anemia, influenza, tuberculosis and neuraesthenia.

Vertigo, or dizziness, is a subjective sensation of a loss of equilibrium. When it appears that the patient himself is falling, rising or whirling, it is called subjective vertigo, and when the objects around the patient appear to be in the state of motion, it is called objective vertigo. Both subjective and objective vertigo may be classed as horizontal when it is present only when the patient is lying down. Horizontal vertigo always disappears when the patient assumes an erect position. Vertigo itself is always a symptom and not a disease. It may be found in disorders of the liver and stomach and disease of the semicircular canals of the internal ear.

DISTURBANCES OF CONSCIOUSNESS.

Consciousness is the ability of the mind to cognize impressions which are capable of producing physical or mental sensations. Unconsciousness is a condition in which there is no cerebral appreciation. The loss of consciousness may occur gradually or suddenly and may have varying degrees of completeness.

Somnolence is the slightest disturbance of consciousness, and is characterized by a marked tendency toward sleep, from which the patient can be easily aroused.

Stupor is a more decided loss of consciousness, in which the patient may pass, and from which he can be aroused only by extraordinary means.

Coma is the most severe form of unconsciousness, from which the patient cannot be aroused. Coma vigil is a severe and grave form of coma, in which the patient lies with his eyes open, but entirely unconscious of his surroundings. It may be accompanied by a low muttering delirium.

Delirium is a state of mental agitation in which the mind is extremely active and is characterized by incoherent speech, delusions and sensory perversions. Delirium may

be active or wild, in which it is necessary to use physical force to prevent the patient from personal injury; or mild and muttering, in which the patient lies still, but busily engaged in his incoherent speech.

Wild delirium is commonly met with in delirium tremens, while mild delirium is more common in cases of extreme prostration in the course of high fever.

A delusion is an absurd and unfounded belief. An illusion is a false interpretation of impressions received from objects that really exist. An hallucination is a sense perception without a physical basis. Any or all of these various disturbances of consciousness may be found in the insanities or the typhoid state.

COMA.

All forms of coma are characterized by a deep sleep from which the patient cannot be aroused, but each form has its peculiar symptoms by which it can be recognized and differentiated from the others.

Opium coma is a state of narcosis, resulting from the introduction of a large quantity of opium into the human body. In this the patient is deeply comatose, the pupils are contracted to pin points, the respirations are slow, varying from 12 to 4 per minute, the pulse is slow but strong and bounding, the face may be cyanosed because of the lack of oxygen, the cornea is insensitive and there is retention of urine, which, if prolonged, may cause the appearance of uremic symptoms.

Alcoholic coma results from the extreme or overabundant use of alcoholic liquor, and the breath has a characteristic odor. It may or may not be possible to arouse the patient, and if he can be aroused he resents the interference with blows and incoherent speech, characteristic of drunkenness. The respirations are deep and of normal frequency, the pulse is strong, full and bounding, the pupils are of equal size and slightly dilated, the temperature of the surface of

the body is subnormal, and there is absence of any paralytic symptoms, which is the most important point in the recognition of this coma.

Apoplectic coma results from intercranial apoplexy and is always profound, it being impossible to arouse the patient in any way. There is a hemiplegia, which can be determined by raising the limbs of each side and permitting them to drop. It will be noticed that the extremities of one side drop more flaccidly than the other. Upon straightening out the wrinkles of the face those of the unaffected side assume their former shape more readily than the affected side. The pupils are unevenly dilated, that on the affected side of the face being the larger. The respirations are of normal frequency but are labored, and there is blowing out of the lips to a noticeable degree on the affected side. Cheyne-Stokes respiration may be present in some cases. The cornea is insensitive, the temperature is above normal, and the head and eyes may be turned toward one side.

Uremic coma occurs in cases of uremia and is often initiated by a uremic convulsion. The face has the characteristic renal pallor, and the face and legs may be swollen from the renal edema. The skin is dry and harsh and has a characteristic urinary odor. The urine contains albumin and casts and is greatly diminished in quantity, the respiration and pulse are irregular, the temperature may be normal, sub-normal or febrile, according to the severity and extent of the incoordination from which the uremia develops, and there are muscular twitchings noticeable in the wrists and legs.

Epileptic coma follows the epileptic convulsion and is recognized by a history of an epileptic attack, blood stained foam upon the lips, bruises upon the head that may have been sustained in falling at the onset of the convulsion, and by its brief duration. The entire duration of the coma may be less than half an hour, but in most cases lasts about one hour. The face is flushed and deeply cyanosed from

the sub-oxidation of the blood, because of the tonic spasm of the respiratory muscles during the convulsion.

Diabetic coma occurs late in diabetes and may come on suddenly, with fainting in a debilitated case. The temperature is sub-normal, the respiration is normal and labored, the pulse is full and bounding, there is a sweetish odor in the room, and the urine contains sugar. This coma is rarely mistaken, as it only occurs late in the course of diabetes mellitus, after the kidneys have become over-exerted from continued over-use.

Coma from sunstroke is usually recognized by the circumstances under which the patient is found, together with an abnormally high temperature, hot dry skin, flushed face, deep, labored respiration, frequent and full pulse, and the profoundness of the coma.

Hysterical coma occurs in connection with hysteria and is more easily recognized after observation of a case than from description. The coma is preceded by an attack of hysteria, minor or major. The face is flushed, the respirations are rapid but not labored, the pulse is normal, the pupils are normal in size, equal, and respond to light, the cornea is sensitive, the eyeballs are upturned, the facial expression is characteristic, and the patient can be aroused from the coma by pressure upon the supra-orbital notch, by pinching the nose or by the inhalation of ammonia.

CONVULSIONS.

A convulsion is a series of contractions involving the voluntary muscles of the major portion of the body. A spasm is a contraction or series of contractions involving a single muscle or a certain muscle group. Convulsions and spasms may be either tonic or clonic. A tonic spasm is a continuous contraction of a muscle or muscles, as the onset of an epileptic convulsion, or in trismus. A clonic spasm is marked by alternating contractions and relaxations of

the affected muscles, as is seen in the later part of an epileptic convulsion, or in hysteria.

Convulsions are common in epilepsy, hysteria, tetanus, uremia, strychnine poisoning, eclampsia, hydrophobia and lesions of the brain.

Epilepsy presents a striking example of both the tonic and clonic convulsions. The seizure is divided into two parts, the first being brief and of the tonic type, the second of the clonic type. Immediately preceding the attack the patient may have a premonitary symptom in the form of an aura, which may vary in different individuals, but usually consists of an imaginary vapor arising from the region of the knees toward the head, and when reaching the level of the head the patient gives a scream, the head and eyes are turned to one side and the patient passes into the tonic spasm. In this the legs and arms are extended, the jaw is clenched, the hands are tightly closed and the respiratory muscles are fixed, causing sub-oxidation and consequent cyanosis. This spasm may last about a minute, when there is a relaxation, after which contractions and relaxations alternate. In this clonic part of the convulsion the muscles of the face, eyes and jaw work convulsively, and the head and extremities jerk rythmically. The action of the jaws may be such as to bite the tongue, causing the foam which forms in the mouth to be blood stained. There may be incontinence of the urine, involuntary movement of the bowels, and after two or three minutes duration the patient passes into the deep epileptic coma.

Although tonic and clonic convulsions may occur in other diseases, the mode and manner of onset and the course of the convulsion will differ according to the disease in which it is present.

PALLOR.

Pallor is a common derangement in the color of the skin, consisting of paleness or duskiness and having different

shades or degrees in different diseases. Pallor may occur suddenly or gradually and it may be permanent or temporary.

Temporary pallor is one which lasts but a short time and is produced either by a vasomotor spasm of the cutaneous capillaries or by improper activity of the heart, where it becomes weak. Temporary pallor also occurs suddenly and can be overcome by an atlas or an H. P. adjustment.

Permanent pallor arises slowly and usually results from an abnormal condition of the blood itself, in which the haemoglobin or the coloring matter of the red cells is deficient, or where the red cells themselves are lacking in number, or where there is a loss in the quantity of blood through hemorrhage. These conditions are very commonly known as anemia, and a person having pallor is said to be anemic. Pallor is found in connection with a great many diseases and it would be useless to name the list here. It is sufficient to say that pallor is found in all those diseases in which there is general malnutrition, hemorrhage, cardiac weakness or vasomotor spasm.

CYANOSIS.

Cyanosis is a bluish discoloration of the skin, due to an excess amount of carbon dioxide in the blood and a lack of oxygen. It may be produced by any condition which will prevent the normal manner of respiration or the taking on of oxygen by the red blood cells. All those diseases which would tend to hinder the passage of air into the lungs, thus producing obstructive dyspnoea, are important factors in the production of cyanosis. Examples of this class of conditions are seen in stenosis of the larynx, bronchial asthma, retropharyngeal abscess, etc. Any condition that would interfere with the expansion of the lungs, such as pleurisy with effusion, contraction of the diaphragm, pneumothorax, hydrothorax and emphysema may produce

dyspnoea and cyanosis. Further, any condition which will interfere with the systemic or pulmonary circulation of the blood, so that it fails to get to the lungs to receive a fresh supply of oxygen, will produce cyanosis. This is most common in valvular disease of the heart, where there is regurgitation of the blood, thus failure of oxygenation. Cyanosis is plainly seen in the mucous membrane of the lips, beneath the finger nails and upon the mucous membranes of the mouth upon pressure.

JAUNDICE OR ICTERUS.

Jaundice is a yellowish discoloration of the skin, due to the presence of bile pigment. Normally, bile pigment should be found only in the biliary apparatus and the intestines, and only is found in the skin and fluids of the body when there is some obstruction to flow of bile from the liver into the intestine.

Jaundice may be of two kinds, mild or severe. Mild or simple jaundice is most commonly met with in temporary obstruction of the common bile duct by gall stones, catarrhal inflammation or pressure by a growth upon an adjacent organ. In such event the common duct is obstructed and the dammed up bile is absorbed by the hepatic vein or passes from the liver by osmosis through the fluids of the entire body, particles of the pigment becoming lodged in the skin and giving rise to the yellowish discoloration.

Severe or grave jaundice is of long standing and occurs when there is a permanent obstruction of the common bile duct, such as may be produced by impacted gall stone in the ampulla of Vater, carcinoma of the gall bladder or liver, chronic cholangitis, pressure by tumor of the head of the pancreas, tumor of the pylorus or of the duodenum, or any other growth or obstruction of the common bile duct.

In simple icterus the discoloration of the skin is slight and it may be unaccompanied by any other symptom, but, as a rule, there are constitutional disturbances. The

appetite is lost and there may be nausea and vomiting, the fecal matter is putty-like from the lack of bile, the urine is dark and contains bile pigment, the conjunctiva is yellowish, and it is here the jaundice is first seen. The individual feels drowsy, is unable to carry on his occupation, loses flesh and strength and may have a slight rise in the bodily temperature, a coated tongue, loss of taste and an offensive odor with the breath.

Icterus gravis or severe jaundice occurs when there is an obstruction of the common duct of considerable standing, such obstruction being nearly complete. It is marked by a deep jaundice, first noticeable in the conjunctiva of the eye and later appearing on the skin of the entire body. There are severe constitutional disturbances, such as emaciation, weakness, anorexia, nausea, vomiting, constipation with attacks of fetid diarrhoea, due to the decomposition of the fecaes from the lack of bile; dark, heavy urine containing bile pigment, and intense itching. There may or may not be a slight fever, and the pulse and respirations are slow. Li. P. and K. P. are adjusted in case of jaundice.

HEAT OF THE SKIN.

The heat of the skin is roughly estimated by placing the hand in contact with it. This may be done anywhere, and it can be determined as to whether or not there is an increase in the bodily temperature. This, however, is not always reliable, for in the apyretic period of intermittent fevers the surface may be moderately cool while there is a raging fever internally. This form of temperature observation is most useful in the vertebral region, and is commonly used to determine the presence and location of hot boxes. By placing the back of the hand upon different places along the spine, hot boxes can be located. A local hot box always indicates a local subluxation in the region of such hot box.

In cases where the bodily heat for a while is elevated, the adjustment is at C. P. and K. P. C. P. being adjusted

to decrease heat production and K. P. being adjusted to increase heat dissipation. General coldness is rarely found except in case of a chill, and this is simply a manifestation of an internal fever, which will soon involve the external surface. The adjustment of such will be as in case of fever. Local coldness is caused by a local subluxation in the zone of the coldness.

MOISTURE OF THE SKIN.

It is natural in warm weather, or upon violent exercise when there is a great deal of oxidation occurring within the body, or when there is much heat formation, to dissipate a part of the surplus heat by sweating. Excessive moisture upon the skin is termed hyperidrosis. Hyperidrosis occurring when there is no excess oxidation is the sign of some abnormality within the body. Night sweats are common in cases of weakness, and may indicate long-standing suppuration, as in tuberculosis, multiple abscess and syphilitic necrosis. In case kidneys fail to perform their normal function in the elimination of urine and excretory material from the body, it is accomplished by the skin.

Anidrosis is an extreme and abnormal dryness of the skin, and is found as a symptom in diseases in which there is polyuria or in which there is high fever, which uses up the bodily secretions. The sweat may be altered in character according to the diseases with which it may be associated. The sweat is yellow in cases of jaundice, it contains urine in cases of uremia or nephritis, it may contain blood in hemorrhage into the sweat glands, and may be brown or red in nervous diseases, such as hysteria. K. P. should be adjusted in all cases where there is an abnormality in the character or quantity of the sweat.

SKIN ERUPTIONS.

Cutaneous or subcutaneous hemorrhages may occur as small spots, called petechiae; or in large areas, called

ecchymoses. This occurs as an eruptive symptom in cerebro-spinal meningitis and dengue, and is also commonly met with in scurvy, purpura and hemophilia. It is produced because of a lack of motor function being expressed in the minute muscular fibres forming the blood vessel walls, permitting them to become relaxed, their fibres to separate and the blood to ooze out between the minute fibres.

Erythema is an evenly distributed redness of the skin, due to a cutaneous hyperemia, and is commonly found in erysipelas. Exanthem is a skin eruption in which there is an uneven redness of the skin of the body, and is commonly found in the exanthemata. The eruptions of the exanthemata are spoken of as macular, papular, vesicular, pustular, and petechial, the latter being previously described.

A macule is defined as a flattened out papule, or it is a small circular red spot, slightly elevated above the level of the skin, measuring from two to four millimeters in diameter, and may be scattered over the entire body densely or sparsely, but, as a rule, does not coalesce. It is the characteristic eruption of measles.

A papule is a rounded or ovoid hard elevation of the skin, and during its early appearance has a feeling like fine shot beneath the skin. They are usually reddish in color after they become fully developed. All pimples could be classed as papules. It is the characteristic eruption in the first stage of variola.

A vesicle is a slight elevation of the skin, containing a clear fluid or serum. It usually follows the papular stage of an eruption, and is found in the second stage of smallpox. A cold sore is a good example of a vesicle.

A pustule is an elevation of the skin, containing pus, and often follows the vesicular stage in an eruption. It is produced by suppuration of the serum that is contained in the vesicle, giving to it a smoky or cloudy appearance. It is found in the third stage of smallpox.

A herpic eruption consists of a series of minute vesicles situated upon a redened and hardened base, and attended by a burning or smarting pain. When occurring on the lips it is called herpes labialis and indicates an inflammation of the respiratory mucous membrane. When occurring on the nose, is called herpes nasi.

Furuncles, or boils, may be classed as a form of cutaneous eruption. They are circumscribed areas of suppuration in the subcutaneous tissue, and usually involves one or more of the sebacious glands. At the onset it is red in color, but as soon as suppuration has occurred it becomes a yellowish-white. Boils may be general or localized, and in all cases K. P. should be adjusted. In case they are localized the local vertemere should also be adjusted.

DROPSY.

Dropsy is a general term that is used in connection with any general or local condition in which there is an excessive or abnormal accumulation of watery fluid in a cavity of the body, or where there is an infiltration of such fluid in the tissues of a part of the body. In case dropsy is localized in one part of the body, such as an extremity, it is called edema. When edema is general, involving the entire body, it is called anasarca, or general dropsy. When dropsy affects single cavities it is given a different name, according to the cavity affected. When there is an accumulation of a serous or watery fluid in the pericardium it is called hydropericardium; when in the peritoneum, it is called hydroperitoneum; when in the thorax, it is called hydrothorax, and when in the brain it is called hydrocephalus.

Anasarca, or general dropsy, is associated with edema, and in the great majority of instances dropsy of cavities is also associated with a local edema. The edema is readily recognized by the paleness of the skin, the swelling, shiny and glossy appearance of the skin, and if pressure be

exerted with the point of the finger over a hard or bony surface, pitting will occur. This latter symptom alone is sufficient for the recognition of edema. Edema may occur in connection with a great many different pathological conditions.

General dropsy occurs with a greater degree of frequency in connection with acute and chronic nephritis than in any other single pathological condition. In nephritis the kidney is affected, so that the excretion of urine is suppressed; the urine is therefore retained within the body, absorbed by other fluid and carried over the entire body, becoming deposited and filtrated throughout all its tissues. In such cases the adjustment is at K. P.

Dropsy also occurs with much frequency in valvular disease of the heart, the valvular defect causing obstruction to the onward flow of blood, the result being venous stasis. When the stasis occurs there is a high pressure upon the vessel walls, and in order to lessen this pressure there is an adaptative osmosis of serum from the hyperemic vessel into the surrounding subcutaneous and cellular tissue. In such cases as this the specific adjustment is at heart place.

Local edema may be produced by pressure upon any of the veins draining the part, and occurs in connection with goitre, aneurism, thoracic and abdominal tumor. The obstruction is local and the edema occurs the same as in cardiac dropsy. Cardiac dropsy is always first noticeable in the feet and ankles, while renal dropsy is first noticeable in the face and beneath the lower eyelids.

Cutaneous emphysema is a rare condition, in which there is an accumulation of air beneath the skin, and in some instances may simulate dropsy or edema. It can be easily differentiated from edema, however, because of the fact that the swelling does not pit upon pressure, but the depressed skin follows the point of the finger back to its former shape as soon as the pressure is removed. There is also a fine crackling sound upon pressure, which is pro-

duced by the passage of air through the subcutaneous tissue. This most frequently occurs in connection with emphysema of the lungs, where an air cell is ruptured and the air escapes along the trachea, forming a small tumor above the clavicle.

CONDITION OF THE JOINTS.

The joints of the body are examined to determine the degree of their movability, the presence of exostoses, swelling, inflammation and structural changes that may have occurred in disease. In case of fever, the joints feel hot upon palpation, the skin is red and shiny, the articulation is swollen and is movable, but movement is extremely painful. Palpation may reveal the presence of bony growths or exostosis, either true or false. If there is a circumscribed collection of watery fluid in the region of the joint it indicates a cyst of synovial fluid collected in the synovial membrane. In many cases of arthritis the joint becomes stiff, so as to reduce the pain that is produced upon motion of the joint, as the motion induces friction between the two inflamed surfaces and pain results from such friction.

Such changes as the above occur in connection with rheumatism, arthritis deformans, tubercular and gonorrheal arthritis, and gout. In cases where it affects but a single joint it is called monarticular arthritis, in cases where it affects the spine it is called spondylitis, and in cases where it affects many joints it is called multiple arthritis.

In a few diseases of the nervous system, such as locomotor ataxia and syringomyelia, the joints undergo marked changes and deformities. It most frequently affects one or more of the larger joints, especially the knee joints. The affected joint becomes suddenly swollen without any great pain, after which the interarticular cartilage becomes softened and disintegrated, the articular ends of the bones become disorganized, the joint becomes anklyosed and great deformity results.

In rickets the joints are also the location of marked deformities, such deformities being the result of epiphyseal proliferation and occurs without pain or stiffness.

BODILY TEMPERATURES.

The average normal bodily temperature is 98.6 degrees, but any temperature from 99.5 to 97.2 is said to be within the range of normal. The bodily temperature may be slightly increased by violent exercise in hot weather, mental exertion and excitement. The most important change in the normal temperature is that which occurs daily. Under normal circumstances the bodily temperature is lowest in the early morning, before six o'clock, and is highest in the evening; the greatest difference being 1.8 degrees in health.

A fever is a condition in which there is a rise in the bodily temperature above 99.5 degrees, and it occurs when there is a disturbance in the normal relation between heat production and heat dissipation, caused by C. P. and K. P. subluxations. The symptoms of a simple fever are a hot, dry skin, flushed face, dry mouth with excessive thirst, malaise, lassitude and languor, anorexia, nausea and vomiting, costiveness of the bowels, scanty high-colored urine, headache and backache, increased pulse rate, and frequency of respiration. In case of a high fever there may be cerebral symptoms of delirium, stupor and coma, and a suppression of the bodily secretions. As a rule, the pulse rate is increased 10 beats per minute, to a rise of one degree in the temperature and a corresponding increase in the respiratory rate, but there are exceptions to this rule.

The daily decrease in the temperature is known as the remission, and occurs in the morning, while the increase is known as the exacerbation, and occurs in the evening. When this order is reversed the fever is said to be of the inverse type. Any temperature below 97.2 degrees is said to be subnormal, while a temperature above 106 degrees is called hyperpyrexia, or excessively high fever, and is a grave symptom.

TYPES OF FEVER.

A continued fever is one in which the daily difference between the remission and the exacerbation is less than two degrees.

A remittent fever is one in which the daily difference between the remission and the exacerbation is more than two degrees, but at no time is the temperature within the normal range.

An intermittent fever is one whose temperature reaches the normal or is subnormal at least once during 24 hours duration.

The continued fever is most common, and is found in the majority of the acute febrile diseases, such as typhoid, typhus, lobar pneumonia, acute tuberculosis and erysipelas.

Remittent fever is seen in tuberculosis, abscess, or any disease in which there is suppuration, although oftentimes in suppuration the fever is intermittent.

Intermittent fever is seen in intermittent malaria, pyemia, suppurating abscesses, ulcerative endocarditis and tuberculosis. It is not uncommon to see more than one type of fever in a single case, as in tuberculosis or abscess, in which, at times, the fever is remittent and at other times is intermittent. Intermittent fever has recurrent chills, fever and sweats.

When a fever terminates abruptly, disappearing in a few hours with profuse sweating, it is said to terminate by crisis, and when subsiding gradually, it is said to terminate by lysis. Typhoid terminates by lysis, while measles, lobar pneumonia and erysipelas terminate by crisis.

A fever that returns several days after its disappearance is said to be a recurrent or relapsing fever, while one in which there is no regular variation in its remissions or intermissions is said to be an irregular fever. Dengue and

relapsing fever have a recurrent fever, and pyemia has a typical irregular fever.

SYMPTOMS PERTAINING TO THE DIGESTIVE TRACT.

Anorexia is a decrease or total loss of the appetite for food. It is commonly met with in the febrile diseases and incoordinations involving the stomach. In such conditions it is not wise to force eating, as the appetite alone is the best guide for this. The cause of the anorexia in such cases is adaptative, because of the inability of the body to utilize food, hence the uselessness of taking it into the body and digesting it. In gastric disorders the appetite is lost because of the inability of the stomach to properly digest it. When in a state of disease the stomach is using all of its force, or mental impulses, for the purpose of reparation, and by forced eating a part of the force would have to be used to digest the food eaten. The adjustment for anorexia is not always S. P., but may vary according to the condition present which is capable of producing this symptom.

Bulimia is an abnormal hunger or craving for food, and is observed in the stage of convalescence in the acute febrile diseases, in which anorexia has predominated for a long time. After the restoration of the body to health the body finds its needs for food, the stomach is able to meet this demand in being able to digest the food, hence hunger prevails. Bulimia is more or less constant in and a cardinal symptom of diabetes mellitus.

Pica is a craving for articles which are not food, and which may be injurious to the body if eaten. It is most commonly seen in cases of insanity and idiocy. Occasionally it is present to a slight extent in pregnancy and chlorosis, in which there is often a craving for slate pencils, which the child will eat.

Excessive thirst is common in diseases attended by an over-excretion of fluid from the body, either through the bowels or kidneys. Is found in diabetes, diarrhoea, cholera infantum, gastritis, xerostomia and all of the febrile diseases except typhoid.

Vomiting is the sudden expulsion of the contents of the stomach and is usually preceded by nausea. Vomiting is an adaptative symptom, and occurs when any substance or substances are in the stomach which it is incapable of digesting, or which, if digested, will be injurious to the human economy. For example, when a poison is taken into the stomach impressions are at once taken up by the afferent nerve and carried to the brain, where they are interpreted, and when Innate obtains such an interpretation she at once sends out motor impulses over the afferent nerve to the stomach, directing the act of vomiting, before the poison can be absorbed and do injury to the body. In vomiting there is a deep inspiration, the glottis closes, the cardiac end of the stomach opens by a contraction of the longitudinal fibres and the forcible expiratory contraction of the abdominal muscles follows, which causes the stomach to be emptied.

Vomiting occurring without the sensation of nausea preceding it is of cerebral origin, and indicates pressure upon the brain which is capable of interfering with the vomiting center.

Vomiting occurs in connection with a great many diseases and has a different character, according to the disease of which it may be a symptom. Vomiting occurs in all diseases of the stomach. Severe vomiting, which is very weakening to the patient, occurs in acute gastritis, and after the contents of the stomach have been emptied the retching continues with an expulsion of a watery fluid and of glairy mucus. In hypersecretion of gastric juice there is profuse vomiting of a thin watery fluid, the gastric juice, which contains the normal .03 per cent H. Cl. If the H. Cl.

should exceed .03 per cent, the condition is hyperchlorhydria, and if the per cent is less, it is called hypochlorhydria.

Bilious vomiting occurs when the pyloric valve is affected and permits the regurgitation of bile from the intestine. It is commonly called biliousness.

When vomiting occurs periodically every two or three days, at which time large quantities of partially digested food, with an abundance of fluid, is vomited, it indicates dilation of the stomach. If such a vomitus be allowed to stand it will separate into three layers. The upper layer will consist of a froth which has formed during the fermentation in the stomach, the middle layer will consist of fluid, and the lower layer will consist of the sediment and solid undigested food. Such vomit has an offensive odor, indicating putrifaction.

Hematemesis is the vomiting of pure red blood, and occurs when there is perforation or rupture of a large vessel of the stomach or esophagus. Hematemesis differs from hemoptysis in that the blood is vomited, not coughed up; in that it is of a darker color, and in that it has an acid reaction, because of having come in contact and being mixed with the gastric juice.

If a small hemorrhage should occur into the stomach the blood will not be vomited immediately, but will lie in the stomach and be acted upon by the digestive juices. At a later period when it is vomited it has lost its red color and is turned to a dark or almost black color, hence is called malena, or coffee-ground vomit.

Hematemesis, or red blood, vomit commonly occurs in connection with ulcer of the stomach, injury which will cause the rupture of vessels, from swallowed blood that has been coughed up and immediately swallowed, and from the rupture of an aneurism into the stomach, which, luckily, occurs but seldom.

Coffee-ground vomit, or malena, is most common in and characteristic of gastric cancer, but also occurs in connection with small hemorrhages in gastric ulcer, chronic gastritis, yellow fever, atrophic cirrhosis of the liver, in which there is portal obstruction, and other diseases in which the blood vessel walls are inelastic or abnormally relaxed.

Fecal vomiting occurs in connection with complete obstruction of the intestine and is preceded by an emptying of the contents of the stomach, then by the vomiting of bile having a fecal odor, and finally by the vomiting of the fecal matter itself.

Pus in the vomit indicates the presence of suppuration, occurring in the mucous membrane of the stomach or the perforation of the stomach wall by an abscess, its pus being discharged into the stomach.

SYMPTOMS PERTAINING TO THE INTESTINES.

Costiveness is a sluggishness of the bowels resulting from a lack of the normal secretions, which give to the fecaes its normal fluidity. Such a condition may be caused by a local subluxation impinging secretory nerves leading to any of the organs that give off a secretion to the intestinal tract. Also in diseases of the kidney in which there is excessive urination, whereby the body is deprived of its normal proportion of fluid, and in order to conserve the remaining supply, all secretions are inhibited.

Costiveness may occur when there is a lack of bile in the intestines, and is marked by a pale stool of a fetid odor, or it may occur when there is suppression of the secretion of the intestinal fluids, in which event upper lumbar should be adjusted.

Constipation is a sluggishness of the bowels resulting from deficient peristaltic motion, or it is a condition resulting from a lack of motor tonicity in the muscular fibres

of the intestine. Constipation proper is always caused by a local subluxation in the lumbar region. The term constipation is, however, commonly, but wrongly used to include both costiveness and constipation. Constipation is a common symptom in various forms of paralysis and in individuals who have by prolonged use of laxatives overstimulated the activity of the bowels. Obstructive constipation occurs where there is any mechanical obstruction to the descent of the fecaes.

DIARRHOEA.

Diarrhoea is an increased frequency and an abnormal fluidity of the stool, in which there is either increased action of the nervous mechanism of the intestines or increased secretion into the intestinal tract.

Diarrhoea is a symptom rather than a diseased condition, and is most commonly found in affections of the intestinal tract where there is an abnormal increase in the amount of intestinal secretions, but may also be found in abnormal conditions of the liver, pancreas, stomach or kidneys, and is found in a few diseases of the nervous system where there is no indication of disturbances of the digestive system other than the diarrhoea.

The character of the stool will vary according to the condition producing the diarrhoea. It is a common symptom of enteritis, and in this affection the exudation from the mucous membrane is very profuse and tends to flush the bowels, giving the stool a mucous or muco-purulent consistency.

In cholera infantum the stools are large in quantity and of a serous consistency, the purging continuing almost constantly.

A thick mucous stool which is streaked with blood and evacuated with much straining and tenesmus is characteristic of acute dysentery, and if the dysentery becomes

chronic the stool may remain of the same consistency, but will decrease in frequency.

A green stool containing a large quantity of undigested bile indicates a partial obstruction of the common bile duct, usually by a stone in the ampulla of Vater, which has a ball valve action.

A stool containing undigested fat is indicative of disease of the pancreas or obstruction of its duct, so the fat is not emulsified and acts as a lubricant, flushing the bowels.

A black stool containing digested blood indicates hemorrhage of the bowels, as occurs in cancer, the blood being altered by the digestive fluids.

Clay-colored stools indicate the absence of bile, and are found in those conditions wherein the bile duct is obstructed, and the bile being dammed back is soon absorbed, giving rise to jaundice. Bile is the normal antiseptic of the intestines, and when absent the fecal matter is often in a state of putrifaction.

Shreds of membrane consisting of transformed mucus is found in the stool in cases of diphtheric enteritis or in mucous colic, and indicates a phlegmonous inflammation of the mucous membrane.

ABNORMALITIES OF URINATION.

Dysuria is commonly known as painful or difficult urination, and occurs in abnormal conditions of the bladder or urethra, in which the mucous membrane is inflamed, the opening obstructed, or the organ pressed upon by a prolapsed viscus, and may also occur when the urinary system is normal but the urine is highly concentrated and highly acid, and the pain in such cases is produced by the irritation of the acid urine upon the delicate mucous membrane of the bladder and urethra.

In gonorrhea the mucous membrane is inflamed, red and swollen, the lumen of the urethra is decreased and the acid urine causes pain when coming in contact with the inflamed membrane. Dysuria is common in cystitis, cancer of the bladder, enlarged prostate gland, adhesions which prevent the entire collapse of the bladder, cystic calculi and neuralgia of the bladder.

Difficult or slow urination is found in those diseases wherein the lumen of the urethra is diminished in size, or in which the muscular walls of the bladder or abdomen have lost their normal tonicity and are unable to force the urine from the bladder. This, also, is present in enlargement of the prostate gland, as it compresses the urethra near the neck of the bladder.

Frequent urination occurs in those diseases attended with great thirst, which is satisfied by drinking large quantities of water, such as diabetes. But polyuria is also found in those conditions responsible for dysuria, and especially where the mucous membrane is easily irritated by highly concentrated urine. Dribbling of urine is not necessarily a form of polyuria, but is rather a condition of incontinence of urine.

Incontinence of urine is the inability to control the passage of urine from the urinary bladder through the urethra, and occurs when the sphincter muscles at the neck of the bladder are paralyzed. Nocturnal enuresis is a variety of vesical incontinence of this kind. Incontinence of urine may also occur in states of coma or unconsciousness, in which the volition is dulled or dormant, the act occurring adaptatively without the assistance of the will.

Retention of urine is an abnormal condition in which the urine is normally secreted by the kidneys, but is retained in the bladder because of constriction of the sphincters of the neck of the bladder, or because of vesical anaesthesia, as occurs in the various forms of sensory paralysis. In this latter condition the brain fails to receive

impressions from the bladder, therefore does not know when the bladder is full or when the urine should be voided, consequently does not send motor impulses to the muscles of micturation, which would cause them to contract, forcing the urine from the distended bladder. The adjustment for a condition of this kind is always local in the lumbar region, unless when resulting from some form of sensory paralysis whose pathology lies in the spinal cord. Retention of urine is common in locomotor ataxia because of the sensory disturbance, due to degeneration of the sensory tract in the spinal cord. The adjustment in such a case is usually at the atlas, but may be anywhere above the local zone of the bladder.

Suppression of urine is frequently confused with retention of urine, but it is a condition in which the kidneys fail to separate the excretory fluid from the other fluids of the body, thus permitting the urine to remain in the circulation of the bodily fluids. Suppression of urine is always the result of improper activity of the kidneys, therefore occurs in diseases of the kidney. This is well seen in Bright's disease, where there is anuria with a resulting dropsy, the dropsy being due to the excretory fluid becoming infiltrated in the tissues and spaces of the body. The adjustment for suppression of urine is always at kidney place.

IMPORTANT SYMPTOM GROUPS.

Coma is the most profound state of unconsciousness, and is marked by stertorous respiration, slow pulse, insensitive cornea, dilated or contracted pupil, failure of the cornea or pupil to respond to light, and expiratory puffing of the cheeks and lips. The various forms of coma have previously been described, in which the characteristic symptoms of each form are mentioned. The above symptoms are common to all forms, with slight variations.

Dyspnoea is more commonly known as difficult breathing, and is characterized by a sense of thoracic discomfort or

a sense of constriction in the chest, the respiratory rate is increased, the mouth is open, the nostrils are dilated, the face is cyanosed, speech is difficult, the skin may be cool, and there may be orthopnoea. This also has variations in form and severity.

Fever is a condition in which the bodily temperature attains 99.5 degrees or over, and all fever or feverish conditions are attended by a preceding sensation of chilliness or by a chill with rigors, and increase in the pulse and respiratory rate, increased thirst, loss of appetite, headache, backache and more or less general aching, general weakness, costiveness of the bowels, scanty and highly colored urine which contains an over-abundance of solids. This increases its specific gravity, and sometimes there is nausea, vomiting and delirium, the latter depending upon the height of the temperature. The adjustment for simple fever is C. P. and K. P.

Internal Hemorrhage is sometimes difficult to recognize, but usually the blood makes its appearance at some orifice of the body, such as the mouth, nose, ears, rectum, vagina, or perforating wound.

Internal hemorrhage begins with pain which is localized at the point of hemorrhage, a sudden drop in the bodily temperature, and in cases of fever when the temperature drops to 95 degrees or less it is said to be indicative of internal hemorrhage, the face becomes pale and has an anxious expression with a fear of impending death, the surface of the body is covered with cool perspiration, and there is great hunger for air. The respirations are short, shallow and jerky, the pulse is feeble and rapid, the apex beat becomes weak and may finally become imperceptible, the radial pulse becomes weaker until unnoticeable, when death occurs. If the hemorrhage is large, syncope and sudden death result. In cases where the hemorrhage is small and continuous the symptoms may cover a period of considerable duration. Internal hemorrhage occurs with

many diseased conditions, among the most common are ulceration of the intestines, ulcer of the stomach, typhoid fever, rupture of an aneurism of the aorta, ectopic gestation, tuberculosis of any organ, occasionally in cancer of internal organs, and in hemophilia and traumatism.

Shock or Collapse is a condition of sudden prostration occurring immediately before death. Its symptoms are very similar to those of internal hemorrhage; in fact, internal hemorrhage is marked by shock. The temperature is lowered, the pulse is thready, the respirations are rapid and shallow, the skin is cool and covered with perspiration, the face is pale and has an anxious expression, there is great weakness, and there may be delirium, stupor or coma.

Syncope is more commonly known as fainting, and results from cerebral anemia. This cerebral anemia may be caused by an atlas subluxation impinging the vasomotor nerves of the cerebral arterioles, or by an H. P. subluxation, which interferes with the action of the heart. Fainting is marked by pallor of the face, quiet expression, imperceptible respiration and pulse, dilated pupils which are sensitive to light, and it is rarely fatal. The duration of fainting is short, but its effect may be weakening for a short time.

Hectic fever is a name applied to the characteristic fever of suppurative tuberculosis. Hectic fever is characterized by pallor of the face with a circumscribed redness of the cheek, bright eyes, pearly sclerotic, clear mind, rapid pulse, rapid respiration, persistent anorexia, and a fever appearing in the afternoon and terminating during the night or early morning by crises, with profuse sweating. This is the characteristic fever of tuberculosis.

The typhoid status is a state, or condition, of great prostration, in which the temperature is greatly elevated. It is commonly found in typhoid fever, from which it gets its name, but is by no means confined to this disease. In the typhoid state there is muttering delirium or coma, a dry

dark coated tongue, sordes on the teeth, subsultus tendinum, carphologia, extreme prostration or weakness, and a high fever. Very rarely this condition is found where the temperature is low in a fatal condition. The typhoid state is considered as a grave symptom and is unfavorable to recovery. It may occur in any of the high fevers, pyemia, abscesses and endocarditis.

INDICATIONS OF ABNORMALITIES OF THE FACE AND HEAD.

Hydrocephalus, or dropsy of the brain, is marked by a large globular head. At birth the normal head is about 14 inches in circumference, and at one year of age it measures 18 inches in circumference. In hydrocephalus the circumference is much greater than the normal, as given above. The anterior fontanel is wide and bulging and is greatly delayed in closing, the sutures are wide and furrowed, the face appears small in comparison with the enlarged head, and there may be strabismus.

The head of rachitis is sometimes mistaken for that of hydrocephalus, but in rickets the head is of square shape, the vertex is flattened; the caput quadratum is formed by the proliferation of the frontal and parietal eminences, the fontanels are delayed in closing, but are depressed and not bulging, and there are alterations in the other skeletal bones.

Cretinism.—The head is large and of irregular shape, the fontanels remain open as late as the tenth year, the face is broad and flat, the nose is broad and negroid, the eyes are situated wide apart, the mouth is open and the tongue protrudes. In addition to this it will be seen from the facial expression that the child is deficient mentally.

Hippocratic countenance is characteristic of acute diffuse peritonitis and cholera. In this there is a facial expression of extreme anxiety, the upper teeth are uncovered by the raising of the upper lip, the respiration is

quickened and of the superior costal type, and the abdominal muscles are fixed.

In exophthalmic goitre there is a characteristic facial expression, due to the protrusion of the eyeballs. This is often so great that the lids are incapable of covering the eyeball, and the mobility of the eye is affected so as to interfere with vision of moving objects.

Paralysis agitans has a peculiar facial expression, known as Parkinson's mask. In this there is no change in the facial expression, with a change in the emotions of the patient. The lower lip droops and permits the flow of saliva from the mouth. There may also be a tremor of the lower lip.

A puffy face with bag-like swelling beneath the lower eyelid and a sallow color is indicative of renal disease. This is especially true when there is the presence of edema in the lower extremities and the presence of albumin in the urine.

Mouth breathing occurs when there is any obstruction to the passage of air through the nose or the naso-pharynx, and is commonly met with in adenoids or nasal polypus.

Spasmodic torticollis is also known as the clonic form of torticollis, and is marked by a spasmodic jerking of the head toward one side, the face being rotated toward the opposite shoulder and chin raised at the same time. In some cases the shoulder is elevated at the same time as the head is drawn down. These movements recur every few minutes and are increased in frequency and force upon excitement. The condition may be caused by a local subluxation in the cervical region, and must be determined by palpation.

The Argyll-Robertson Pupil is a common symptom of locomotor ataxia, and is one in which the pupil does not respond to a change in the amount of light, but does change in size, in accommodation, or to the variation of distance

of objects. This can be determined by shading the eye and suddenly flashing a light before it. If the Argyll-Robertson pupil is present, it will not contract nor change in size when subjected to the greater light. But when viewing objects at different distances will change according to the distance of the object under observation. This symptom may also be found in dementia paralytica or general paresis of the insane.

Ptosis is a drooping of the eyelid, and results from paralysis of the levator palpebrae muscle. Ptosis may be unilateral or bilateral, and is caused by a third or fourth cervical subluxation which affects the oculomotor nerve and diminishes the motor function of the paralyzed muscle.

Strabismus is more commonly known as cross-eye, and is the ability to bring the visual axes to bear upon one point at the same time. It may affect one or both eyes, and is due to a paralysis of one or more of the muscles of the eyeball. This is caused by a middle cervical subluxation. If the eyeball is turned toward the external angle of the orbit it is known as divergent or external strabismus; if the eyeball is turned toward the nose it is called internal or convergent strabismus.

Diplopia or double vision results when the visual axes are not properly adjusted to each other, so that the image of the object observed falls on two different portions of the retina of each eye. It is usually caused by an upper cervical subluxation, and is a common symptom of locomotor ataxia and tumor of the brain.

When both eyes are turned toward one side and the patient is unable to voluntarily change their position, it is termed conjugate deviation. Such a condition might result from a paralysis of the internal rectus muscle of one eye and the external rectus of the other eye, or from some structural change in the center in the brain, as in apoplexy or tumor. The adjustment for this condition is usually atlas or axis.

NASAL DISCHARGES.

Discharges from the nose may be watery, mucous, muco-purulent, purulent or bloody. The former three are usually non-offensive, and the latter two may be offensive. They occur in the form of an exudation in inflammatory diseases of the mucous membrane lining the nasal passages.

Watery discharges are commonly found in the initial stage of coryza, acute nasal catarrh, hay fever, influenza, measles and whooping cough. This watery discharge occurs during the early stage of the inflammation, when the blood vessels are congested and the mucous membrane is swollen from the filtration of serum into its tissues. After the inflammation has been present for same time there is a slight change in the consistency of the secretion. It then becomes thick and mucus-like. This mucus is abnormal, however, and is very viscid. Later in the inflammatory process there is a slight degree of suppuration, with the formation of a few pus cells, which, when mixed with the mucus, gives to it a yellowish color, or it may only be streaked with the yellow pus cells. Such an exudate is known as a muco-purulent exudate. Still later, when the degree of suppuration is more marked, as it is in atrophic rhinitis, the entire exudate is suppurative in character and of a greenish yellow color. This is called a purulent exudate.

If the discharge has a very fetid odor and consists of offensive green crusts, it is indicative of atrophic rhinitis, syphilitic rhinitis or necrosis of the nasal septum, and is known as ozena. This ozena is especially characteristic of syphilis.

A bloody discharge may be either offensive or non-offensive, according to the condition from which it comes. If the discharge consists of pure blood, as in epistaxis, it is non-offensive, and results from a hemorrhage of the nasal capillaries. But if the discharge contains pus which is streaked with blood, it is usually offensive, and the hemorrhage is the result of an erosion of the small vessels lying in the affected mucous membrane.

Often in diseases having an offensive discharge the olfactory cells are destroyed and the sense of smell is lost.

THE MOUTH.

The mouth and lips are frequently examined for objective symptoms of many diseases. The mucous membrane of the lips is very thin, so that the pallor and cyanosis is best seen here Cyanosis indicating suboxygenation of the blood, and pallor a condition of anemia, which may be local and temporary or general, and if general will be confirmed by examination elsewhere.

Koplik's Spots are small red spots with a bluish-white center, which appear upon the inner surface of the lips and cheeks during the initial stage of measles and disappear upon the appearance of cutaneous eruption. Many authorities say the finding of these spots is pathognomonic of measles.

Herpes labialis, more commonly known as cold sores, are found upon the lips in a respiratory catarrh or in disorders of the stomach. They are a symptom of considerable importance in lobar pneumonia, occurring in about ninty per cent of the cases. Herpes occurring on the lips may be removed by local adjustments in the cervical region, lower dorsal region, or S. P.

Unilateral deviation of the mouth may occur as a paralytic symptom of apoplexy or facial paralysis of any kind. In this the angle of the mouth is drawn to one side and downward, and upon respiration there is a flapping of the cheek and lips, which indicates the loss of motor power. Such a condition is produced by a local cervical subluxation, usually of the upper region.

The chancre of syphilis oftentimes appears upon the lips, is swollen and hard, and in the center there is a small ulcer. The lymphatic glands in the region of the neck will become painlessly enlarged and hard, and the secondary symptoms

of syphilis will appear in the course of two or three months. The gums also may become pale or red and spongy, the teeth will become loose and sometimes fall out. This is indicative of scurvy and mercurial poisoning.

Of the symptoms pertaining to the teeth, the only one of importance is the syphilitic screw-driver teeth. These teeth appear late or the child may be born with large teeth; they have a broad base and are narrow toward the edge. On the edge there is a single large notch. The teeth may, however, be small and situated far apart. They are also known as Hutchinson's teeth.

Aphonia is a loss of voice, and dysphonia is a partial loss of voice or hoarseness, and results from improper vibration of the vocal cords. This is a common symptom of laryngitis or croup, in which the cords are swollen and thick, and do not respond in vibration to the expiration of the air from the lungs. Aphonia is a more severe condition than dysphonia, and occurs in edema of the cords and retropharyngeal abscess, both of which are considered serious. However, complete aphonia will result from a lower cervical subluxation when the impingment is on a motor nerve leading to the cords.

This produces a loss of elasticity and tonicity in the fibrous bands, causing them to be widely separated, and attempts at phonation would be useless.

It is necessary to distinguish between aphonia and anarthria. The latter is a condition in which the voice is normal but the voice cannot be formed into articulate words. Anarthria results from an abnormal condition of the organs of speech or from an abnormal condition of the speech center in the brain, or from the inability to hear. The form of anarthria will depend upon the muscles involved. When the lips are paralyzed it is difficult to articulate the labials, such as m, b, p, or f; when the tongue is paralyzed it will be difficult to articulate the linguals, such as l, n, r, s, t, or d; and when the palate muscles is the seat of the paralysis it

will be difficult to articulate the gutturals, such as g, k, and the hard sound of c. The adjustment must be made according to the muscles involved.

Scanning speech, in which the words are spoken slowly and each syllable is accented as if reading verse, is a common symptom of multiple sclerosis and sometimes general paresis.

Aphasia is the inability to comprehend speech, either written or spoken. This is always caused by an atlas subluxation which interferes with the function of certain educational centers in the brain. This will vary greatly in severity from slight mental defects to that condition found in idiocy, involving the voluntary action of muscles. Aphasia may be motor or sensory. Motor aphasia is a condition in which the individual understands what has been said and is capable of forming an intelligent reply, but is unable to recall the muscular movements of the organs of speech necessary to express his thought. Sensory aphasia may affect any of the special sense organs, but usually the auditory and visual senses. Visual aphasia would, then, be a condition in which the patient can see, but does not understand anything that he perceives through the eyes. Auditory aphasia is a condition in which the patient hears, but does not comprehend anything that he hears, as if listening to a foreign language.

Apraxia is closely associated with aphasia, and is the inability to recognize or understand the nature and use of objects, or the identity of individuals. There may be as many kinds of apraxia as there are kinds of sensation, among which are mind deafness, mind blindness, mind anosmia and mind ageusia.

The majority of cases of aphasia and apraxia which are not symptoms of some disease are congenital in their origin, and in the vast majority of cases there is a history of difficult labor at childbirth, during which time the causa-

tive atlas subluxation may be produced. Many cases have been adjusted with remarkable success.

COUGH.

Cough is an important diagnostic symptom of disease of the respiratory apparatus, and may be classified as laryngeal, bronchial, and lung, depending upon the seat of the diseased condition from which the cough arises. Cough may also be classified as being dry, loose, paroxysmal, brassy or metallic and suppressed.

A dry cough is one in which there is little or no expectoration and may be accompanied by the expulsion of a pellet of mucus. A dry cough is found in the first stage of bronchitis, tuberculosis, asthma, whooping cough, influenza, or irritation of the respiratory mucous membrane by dust, or irritating substances.

A loose cough is one in which there is profuse expectoration of exudate. It is found in the advance stages of all inflammatory diseases of the respiratory mucous membrane, especially so in bronchitis, pneumonia, whooping cough, and tuberculosis.

A paroxysmal cough may be either dry or loose, and is one that occurs at regular or irregular intervals. It is characteristic of whooping cough and bronchiectasis. In the latter there are sacculations formed in the walls of the bronchial tubes, which are filled with a purulent exudate. This collects during the night when the patient is in the recumbent poster; then upon arising the exudate overflows from the sacculation, passing down upon the healthy mucous membrane. This irritates the healthy membrane and cough is adaptatively produced for the purpose of expelling the irritation.

A brassy or metallic cough always originates from the larynx, and is commonly seen in croup, laryngeal diphtheria and laryngitis. A suppressed cough may be either

inflammation of the lungs. It has an offensive odor and consists of destroyed lung tissue.

Hemoptysis is the expectoration of a considerable quantity of pure blood, and indicates a hemorrhage of a pulmonary or bronchial vessel. This is a common occurrence in tuberculosis where there is an erosion of the blood vessel walls; but also occurs in perforation of the lung, abscess, gangrene and cancer. It is necessary to distinguish between hemoptysis and hematemesis. The former is usually accompanied by a cough, upon which the mouth is filled with salty blood and spat out. The blood is of a bright red color, is neutral in reaction, and is usually frothy. Hematemesis is produced upon the act of vomiting. The blood is of a dark red color, because of having lost its oxygen and having been altered by the digestive fluids, and is acid in reaction because of being mixed with the gastric juice.

THE SPINAL COLUMN.

The spinal column is one of the most important parts of the body, and is the part to which the Chiropractor largely confines his examination. The spinal column is examined for curvatures, ankyloses, exostoses, subluxations, and other deformities.

A posterior curvature of the spine is called a kyphosis; a lateral curvature of the spine is called a scoliosis; and an anterior curvature of the spine is called a lordosis. The significance of spinal curvatures is too great to be considered here, but brief mention will be made as to disease conditions of which they are symptomatic.

Kyphosis is a prominent symptom of asthma and emphysema, but the most common condition indicated by kyphosis is Pott's disease. Pott's disease is tuberculosis of the bodies of the vertebrae. The tubercular inflammation causes the bodies to become soft and the weight of the trunk causes the anterior part of the body to become thin,

Fig. 1.—*Curvature of spine, showing kyphosis and rotary scoliosis.*

thus making the vertebra become wedge shape. Such a condition, involving several vertebrae, will give rise to an acute kyphosis. In every case of acute kyphosis Pott's disease should be suspected.

Scoliosis is a common symptom in chronic interstitial pneumonia and chronic tuberculosis, where the condition involves but one lung. In such a condition the concavity of the scoliosis is toward the affected side, thus permitting greater and increased expansion of the unaffected side. In such conditions the scoliosis is adaptative, and any adjustment that may be given should be given for the purpose of restoring normal function to the internal viscus, or to the affected viscus, of which the curvature is adaptative.

Lordosis is always adaptative, and in diseases of the spine it is always adaptative to a kyphosis. It is commonly found in the lumbar region in case of pregnancy, ascites, or large abdominal tumors, but may also occur when the spinal muscles are weakened from paralysis and unable to maintain the body in an erect position.

Ankylosis of the vertebrae is a growing together or uniting of the articulations, which may be brought about by a softening of the bone, so that two bones may become fused, or it may be produced by a new growth of bone upon one or both of the vertebrae, causing their union. Ankylosis of the spine can easily be determined by having the patient sit in an erect position and by placing the three palpating fingers between the spinous processes in the region of the spine in which the ankylosis is suspected; then by having the patient bend forward and backward it can be determined whether or not there is movement. If movement exists there is no ankylosis, but if no movement can be detected the stiffness of the spine may be due to ankylosis. A spinograph, or X-ray picture of the spine, should be made to accurately determine the condition.

Exostosis is an abnormal or excessive growth of bone upon the surface of bone, or in their cavities. Exostoses

sometimes form upon the spinous processes of the vertebrae and interfere with vertebral palpation. This can only be overcome by resorting to the spinograph. False exostoses are usually found on the bodies of the vertebrae and play an important part in the formation of ankyloses.

A vertebral subluxation is a partial displacement of the vertebra, and is determined by vertebral palpation. A subluxated vertebra prevents normal movement of the spine and causes impingment upon the spinal nerves at the intervertebral foramen, thus interfering with the transmission of brain energy to the tissue. With mental impulses being diminished in an organ there will be abnormal function in that organ, thereby making the organ weak, unable to perform its work, and susceptible to disease. The vertebral subluxation is more thoroughly discussed in the "Science of Chiropractic," by Dr. Palmer.

THE HEART.

The cardiac cycle occupies eight-tenths of a second, divided as follows: The auricular systole lasts one-tenth of a second; the ventricular systole lasts three-tenths of a second, and the diastole, or period of rest, lasts four-tenths of a second. The valves of the heart are for the purpose of guarding the openings, so as to prevent the regurgitation of blood into the cavity from which it has been forced. Any defect of these valves permits regurgitation, or obstruction to the flow of the blood, and is commonly spoken of as valvular, or organic disease of the heart.

The valvular defects are aortic stenosis, aortic incompetency, mitral stenosis, mitral incompetency, tricuspid stenosis, tricuspid incompetency, pulmonary stenosis, and pulmonary incompetency.

In aortic stenosis there may be a contraction of the circular muscles surrounding the aortic opening, or a thickening and adhesion of the valve segments, so that when the ventricle contracts the opening is insufficient to permit

OSTEOLOGICAL LABORATORY
THE PALMER SCHOOL OF CHIROPRACTIC, Davenport, Iowa, U. S. A.
CABINET SECTION SHELF SPECIMEN
CARD BELONGS TO SPECIMEN MARKED
COPYRIGHTED 1911
BY THE PALMER SCHOOL OF CHIROPRACTIC,
"CHIROPRACTIC FOUNTAINHEAD"
DAVENPORT IOWA

Fig. 2.—*Case of Pott's disease, showing cavities in body of vertebrae.*

the blood to pass into the aorta in the three-tenths of a second, which it is normally allowed. The result of this hindrance to the onward flow of blood is an adaptative hypertrophy of the left ventricle.

In aortic incompetency the valve segments may be deformed by ulceration, as in endocarditis, abnormally relaxed, or circular muscles surrounding the aortic opening may be relaxed to such an extent that the valve is insufficient to properly close it. The result of this being regurgitation of blood from the aorta back into the left ventricle. In order to compensate for this regurgitation the left ventricle becomes hypertrophied and its cavity is increased in size.

Mitral incompetency is the most common form of valvular disease, and results from a shrinking of the valve, erosion of the valve in endocarditis, contraction of the cordae tendinae, or dilation of the circular muscles surrounding the opening. Mitral incompetency permits regurgitation of blood from the left ventricle into the left auricle. This regurgitation will offer resistance to the flow of blood from the lungs through the pulmonary veins, which empty into the left auricle, thus producing pulmonary congestion.

Mitral stenosis occurs when the circular muscle surrounding the left auriculo-ventricular opening is contracted, or when the valve segments are thickened and adherent. This prevents the normal flow of blood from the left auricle into the left ventricle.

The changes producing defects of the tricuspid and pulmonary valves are the same as those producing defects on the left side of the heart, as previously described. Valvular disease on the right side of the heart is much less frequent than on the left side. In all valvular defects the interference in the circulation of the blood gives rise to marked symptoms referable to the heart and to other organs affected by such defect.

In order to maintain the circulation as near normal as possible under the circumstance of the disease, the heart muscle hypertrophies to meet the increased work which is thrown upon it. This is known as compensation. So long as the increased strength of the heart walls serves to maintain a circulation with sufficient force to prevent stagnation there are no marked symptoms present, and it is then said that hypertrophy compensates for the valvular defect. If, however, the heart muscle should become weak and dilate, so that the blood circulation cannot be maintained, stagnation results, and it is said that compensation is broken or ruptured.

A murmur is an abnormal sound of the heart, and occurs when any of the valves work improperly. Murmurs are of a great deal of diagnostic importance, as they can be located and characterized as affecting certain valves.

In the stenosis of any valve the murmur is described as being sharp, shrill, high pitched, and occurring as if the circulating blood is meeting resistance.

In incompetency the murmur is described as being soft, low pitched and blowing, and occurs when the blood flows back through the opening, the valve of which is defective.

VALVULAR AREAS.

Cardiac murmurs are ascertained upon auscultation, and when located in certain areas signify certain diseased conditions of the valve over whose area the murmur is heard. The valvular areas are four in number—the aortic, mitral, tricuspid and pulmonary. The valvular areas are the places at which the stethoscope is placed when listening to the murmur, and not the region directly over the valve.

The aortic area lies in the second right intercostal space just to the right of the sternum, upon the aorta and above the aortic valve. The second right costal cartilage is often called the aortic cartilage. A soft, low pitched, blowing

murmur heard in this area during the diastole of the ventricles indicates aortic incompetency. A short, sharp, shrill, high pitched murmur heard in this area during the systole of the ventricles indicates aortic stenosis.

The mitral area is at the apex beat of the heart, or the point of the chest wall which is approached by the apex of the heart. Normally this is in the fifth intercostal space on the left side, about one-half inch internal to the mammillary line, but in diseased conditions where the heart is enlarged and displaced, this area will vary. A soft, low pitched, blowing murmur heard in this area during the systole of the ventricles indicates mitral incompetency. A sharp, shrill, high pitched murmur heard in this area during the systole of the auricles indicates mitral stenosis.

The pulmonary area lies in the second intercostal space to the left of the sternum upon the pulmonary artery and above the pulmonary valve. A soft, low pitched, blowing murmur heard in this area during the diastole of the ventricles indicates pulmonary incompetency. A sharp, shrill, high pitched murmur heard in this area during the systole of the ventricles indicates pulmonary stenosis.

The tricuspid area lies behind the right half of the lower fourth of the sternum, or behind the right half of the ensiform cartilage between the fourth and sixth ribs, at a point at which the right ventricle lies close to the chest wall. A sharp, shrill, high pitched murmur heard in this area during the systole of the auricles indicates tricuspid stenosis. A soft, low pitched, blowing murmur heard in this area during the diastole of the auricles indicates tricuspid incompetency.

Upon auscultation of the heart for murmurs it is well to have the patient suspend breathing, as the respiratory sound will interfere with the detection of the murmur.

In an adult the normal average pulse rate is seventy-two, but it is not uncommon to find this as low as sixty, or as high

as one hundred, without the existence of any diseased condition of the heart. In infants, women and the extreme elderly the pulse rate is higher. In febrile conditions the pulse rate is increased eight to ten beats for each degree of temperature above normal. There are exceptions to this rule, however. When the pulse rate exceeds one hundred and fifty beats per minute it is termed tachycardia; when the pulse rate is less than sixty per minute it is termed bradycardia. Tachycardia is found as a symptom in exopthalmic goitre, pericarditis, meningitis, shock and tumor. Bradycardia is found as a symptom in poisoning by certain drugs, epilepsy, cancer of the stomach, insanity and myxedema.

An irregular pulse is one in which the elapse of time between the beats varies, and is seen in the cardiac neuroses, valvular diseases of the heart, goitre, upper pressure upon the diaphragm from gas and from dilatation of the heart. An intermittent pulse is one in which there is an omission of one or more beats of the heart, and indicates an ineffectual systole of the left ventricle, which results from insufficient strength of the cardiac muscle to propel the blood into the aorta. Intermittent pulse is found in fatty degeneration of the heart and dilatation of the heart.

Pulsus tardus is a slow pulse, in which the pulse wave arises slowly and recedes slowly. It is usually a pulse in which there is high tension, and is commonly seen in chronic interstitial nephritis and arteriosclerosis.

Corrigan's pulse, which is commonly called the shot pulse, or water-hammer pulse, is one whose pulse wave arises suddenly and falls suddenly, and is the characteristic pulse of aortic incompetency.

ABNORMALITIES OF RESPIRATION.

Normally the ratio of the pulse rate of respiration is four to one, and in fever the pulse rate is increased eight to ten beats a minute to one degree increase in temperature; and the respiratory rate is increased two to three

respirations to one degree increase in temperature. Any other abnormal increase of respiration usually indicates dyspnea. In all diseases wherein the capacity of the lungs is lessened and deficient expansion results, there is abnormally rapid breathing. Deficient expansion may be determined upon inspection or measurement of the chest. Deficient expansion is a common symptom of pneumonia, pleurisy, intercostal neuralgia, bronchitis, pericarditis, sub-phrenic peritonitis, laryngeal stenosis, hydrothorax, or any other condition which would prevent the passage of air into the lungs.

Cheyne-Stokes breathing is a peculiar form of irregular breathing, which is marked by paroxysms of alternating dyspnea and apnoea. This is most frequently encountered in a state of coma, and begins by a decrease in the frequency and extent of air entering the lungs until breathing entirely stops. After a short period of apnoea there is a slight, slow respiration, which progressively increases in depth and frequency until the patient is breathing very forcibly and rapidly, which indicates the period of dyspnea. After a short duration of dyspnea the respiration gradually diminishes until the period of apnoea is again reached. The period of apnoea lasts from thirty seconds to two minutes. Cheyne-Stokes respiration is considered a grave symptom.

Unilateral expansion of the chest is noticed in diseases affecting one lung so that its power of expansion is diminished, and in order to compensate for this deficiency in expansion the other lung increases its activity, causing a marked increase in expansion on the unaffected side. This is met with in hypertrophy of the heart, lobar pneumonia, tuberculosis, tumor of the lungs, pleury, pericarditis, or a serous effusion into the pleura cavity.

Vocal fremitus is a peculiar vibrating sensation perceived by placing the fingers upon the thoracic wall during respiration. These vibrations begin in the vocal cords, and are conducted through the trachea and bronchial tubes,

through the substance of the lungs to the chest wall. Vocal fremitus will vary according to the conductivity of the media through which it passes, therefore in diseases in which the lung tissue is thickened, or in which the air cells are consolidated, the fremitus will be increased. Vocal fremitus is decreased in emphysema of the lung and in conditions where there is an effusion of serum, or the presence of air in the pleural cavity, because this would interfere with the conduction of the vibrations from the lung to the chest wall.

URINALYSIS.

Urine is an excretion formed by the kidneys, in which nitrogenous products are thrown from the body. It is of a light amber color, of an acid or saline taste and has an acid reaction.

The specific gravity of normal urine is 1.020, and is obtained by the use of the urinometer. The normal quantity of urea in urine is 1½ to 2 per cent, or about 30 grams.

To find the number of grams of solids in urine, multiply the last two figures of the specific gravity by Haser's coefficient (2.33), and the result is the number of cc, or grams of solids per 1000 cc of urine.

The normal acidity of urine is 40 degrees, and is determined by the use of the acidimeter. To find the *degrees* of acidity, place 10 cc of urine in the acidimeter, to this add 2 drops of Phenol Phthalein (1 per cent), and then add 1-10 decinormal caustic soda until the mixture becomes a permanent pink. Read degree of acidity on the graduated tube.

The normal quantity of urine voided in 24 hours is about three pints, or 1500 cc. The total amount of solids in

normal urine varies from 3.59 to 4.60 per cent of this amount.

Urea	forms	2%	or about	30	grams
Chlorides	form	.6 to 1%	or about	6 to 10	grams
Sulphates	form	.1 to .2%	or about	1 to 2	grams
Phosphates	form	.17 to .26%	or about	1.7 to 2.6	grams
Ammonia	forms	.04 to .06%	or about	.4 to .6	grams
Uric acid	forms	.016 to .083%	or about	.16 to .83	grams

In addition to the above there are traces of indican, creatin, lime, magnesia, potash, and about 10 grams of other extractives that are excreted from the fluids of the body by the kidneys. These extractives consist of mucus, destroyed cells, granules of fat and other substances.

TEST FOR INDICAN.

Take equal parts of urine and H Cl in a test tube. Best to have about 2 cc of each. To this add a few drops of $CH\ Cl_3$ and then add $H\ NO_3$ drop by drop, and if indican is present the result is an indigo blue color.

ALBUMIN TEST.

Albumin is commonly found in the urine in inflammatory diseases of the kidney, and is usually detected by very simple tests.

Heller's Heat Test.—Place two or three cc of urine in a test tube and boil over an alcohol lamp. If albumin is present it will soon coagulate and give to the urine a cloudy appearance. To determine whether this coagulate is albumin or mucus add a few drops of acetic or nitric acid. If after dropping in the acid the coagulate should clear up there is no albumin present and the cloudiness is due to the presence of mucus. If the cloudiness remains it is due to coagulated albumin.

Heller's Ring Test, or the Nitric Acid Test.—Place two cc of nitric acid in a test tube and overlay with the suspected

urine. If albumin is present a white ring will form at the junction of the urine and the acid.

ESBACK'S QUANTITATIVE TEST FOR ALBUMIN.

For this test Esback's albuminometer should be used. This tube is especially graduated for the purpose. Fill the tube to the mark U with urine, then pour in Esback's solution to the mark R. Shake until well mixed and let stand for twenty-four hours, at which time the albumin has precipitated and collected at the bottom of the tube. By reading the graduated scale you have the number of grams of albumin per 1000 cc of urine.

Esback's solution is composed of picric acid 10 parts, citric acid 20 parts and water 1000 parts. Should be prepared 24 hours before using.

TEST FOR BILE PIGMENT.

For this test use the albuminoscope. Mix 30 min. each of urine and nitric acid and place in the large side of the albuminoscope. To this add 30 min. of sulphuric acid in the funnel side of the tube. If bile pigment is present a green ring will form at the junction of the two fluids.

TEST FOR BILE SALT.

Mix a reagent consisting of water 2 parts, peptone 1 part and acetic acid 1 part.

Place the reagent in the large side of the albuminoscope and add the urine in the funnel side. If bile salt is present a white zone is present at the junction of the reagent and the urine.

TO DETERMINE THE CAUSE OF PRECIPITATE IN URINE.

1. Heat, but do not boil, for a few seconds and if the top of the precipitate clears up it is due to the presence of urates.

2. If heating does not cause it to clear up, add a few drops of acetic acid. If it then clears up the precipitate is due to the presence of phosphates.

3. If the precipitate still remains add KOH, and if after adding this it clears up it is due to pus, mucus or bacteria.

QUANTITATIVE TEST FOR SULPHATES.

The reagent for performing this test is composed of barium chloride 4 parts, water 16 parts, and hydrochloric acid 1 part. To 10 cc of urine add 5 cc of the above reagent. Place the mixture in the graduated tube of the centrifuge and revolve three periods of five minutes each. The sulphates will precipitate in the bottom of the tube and the scale will give the number of grams per 1000 cc of urine.

PHOSPHATES.

To 10 cc of urine add 2 cc of a 50 per cent solution of acetic acid and 3 cc of a 5 per cent solution of uranium nitrate. Perform as above.

CHLORIDES.

To 10 cc of urine add 10 or 20 drops of nitric acid, then fill up the tube to 15 cc with (⅛ solution) silver nitrate. Place in the centrifuge and revolve. The chlorides precipitate and collect at the bottom of the tube, the scale giving the number of grams per 1000 cc of urine. By permitting the tube to stand for 24 hours the precipitate will form as if revolved in the centrifuge. Purdy's centrifuge is usually used in this work, and the above three methods are known as Purdy's methods.

TESTS FOR SUGAR.

The four tests most commonly used for the detection of sugar in the urine are Trommer's, Haines', Fehling's and Parvy's. They are also known as the copper tests for sugar.

HAINES' TEST.

Haines' test is more commonly used than any of the others, because the solution is more easily prepared and the test more easily performed. Haines' solution consists of water ½ oz., glycerin ½ oz., copper sulphate 30 gr., potassium hydrate 5 oz. If accuracy is desired the solution should be freshly prepared before use. Place 5 cc of the solution in a test tube and bring to a boil, then add urine drop by drop with a pipet, and the solution becomes an orange yellow if the urine contains sugar.

TROMMER'S TEST.

To 5 cc of potassium hydrate add as much copper sulphate as can be dissolved. Then apply heat and boil for one minute. To the boiled solution add urine drop by drop and a yellowish precipitate will be formed.

FEHLING'S TEST.

Solution No. 1. Copper sulphate 34.62 grams and add enough water to make 500 cc.

Solution No. 2. Sodium potassium tartarate 173 grams and add 500 cc of sodium hydrate (Sp. Gr. 1.140).

Take equal parts of solution No. 1 and No. 2 and add four times as much water. Apply heat and boil the upper part of the solution in the test tube. When brought to a boil drop in urine drop by drop, and if the suspected urine contains sugar there will be an orange or orange-yellow precipitate.

PARVY'S TEST.

Use Parvy's solution, which is composed of copper sulphate 320 grains, potassium tartarate 640 grains, caustic potash 1280 grains, and water 20 ounces.

The test is performed the same as the foregoing ones. Two or three cc of the solution is brought to a boil and then

urine is dropped in, and if the solution changes its color and becomes yellowish or orange it contains sugar.

Benedict's test for sugar is said to be 10 times as sensitive as any of the foregoing tests. The reagent is made up of copper sulphate 17.3 grams, sodium citrate 173 grams, sodium carbonic crystal 200 grams, water 1000 grams. Boil 5 cc of this reagent in a test tube and add 8 to 10 drops of urine. After adding the urine, boil for one or two minutes, no more, and if sugar is present there is a red, yellow or green precipitate. If the quantity of sugar is very small the precipitate will form after the urine is cool.

For diacetic acid take perchlorid and add slowly to the urine. If the diacetic acid is present the bordeau ray appears throughout the urine.

ACETONE TEST.

To distilled urine add a watery sodium nitro-prussid which has been freshly prepared. To this add sodium hydroxide until the color is red. If it becomes yellow the test is positive.

INDICATIONS FROM URINALYSIS.

Chemical examination of the urine often reveals symptoms which are of considerable diagnostic importance, and a few of the most frequent indications are as follows:

1. In acute diffuse nephritis the quantity of urine is diminished to five or six ounces in twenty-four hours, and in severe cases may be totally suppressed. The specific gravity is moderately high, ranging from 1.020 to 1.025, and albumin is present in large amount. The exact per cent can be determined by Esbach's quantitative test.

2. Chronic diffuse nephritis is characterized by diminished quantity of urine, having a low specific gravity, frequently being as low as 1.010, and contains an abundance

of albumin. More albumin is found in the urine in chronic diffuse nephritis than any other disease.

3. Chronic interstitial nephritis is characterized by polyuria of a light yellow or clear color, and having a low specific gravity. Albumin is very scanty, and often cannot be detected at all. There may be a few casts in the urine.

4. Amyloid kidney is marked by increased quantity of urine of a clear pale color, having a low specific gravity, with little or no sediment. There is the presence of casts and an abundance of albumin.

5. Diabetes mellitus is marked by a great increase in the quantity of urine, sometimes reaching three or four gallons in twenty-four hours. The urine is of a clear pale color and has a high specific gravity, varying from 1.030 to 1.050. The urine has a sweetish odor and contains an abundance of grape sugar, increased urea, acetone and diacetic acid.

6. Diabetes insipidus is characterized by a marked increase in the quantity of urine, often three or four gallons may be voided in twenty-four hours. The urine is of low specific gravity, ranging from 1.002 to 1.009, but does not contain sugar nor albumin.

7. Pyelitis is marked by cloudy urine having an acid reaction, and contains pus, destroyed epithelial tissue and blood, the latter being determined by microscopical examination rather than chemical examination. In case the inflammation involves part of the substance of the kidney the urine will also contain albumin and casts.

8. Tuberculosis or other suppurative diseases affecting the kidney is marked by the presence of indican in the urine. The urine may also contain pus, blood, albumin and destroyed epithelial tissue.

THE SPINOGRAPH AND X-RAY.

Many of the difficulties which arise in vertebral palpation can readily be solved by the spinograph, or an X-ray

Fig. 3.—*Showing exostoses on left transverse processes of cervical vertebrae.*

Fig. 4.—*Showing tuberculous necrosis of humerus.*

picture of the spine. Such conditions as bent spinous processes, deformed spinous processes due to exostoses, ankyloses, cleft spines, and vertebrae hidden by tumor or any other abnormality of bone are easily made clear by the spinograph.

Many cases that have been adjusted according to vertebral palpation without results have recovered in a short time after having had an analysis according to the spinograph. It is always advisable to have a negative made of the spine when such is possible.

The X-ray is also of value in showing diseased conditions of bone, as is illustrated in the accompanying cut. In the case of tubercular necrosis small black spots will be seen, which are occupied by a degenerating tubercle.

It is very rare that tubercular necrosis crosses an articulation from one bone to another, but the affected bone becomes honeycombed and soft, so that false exostoses form near its articular end, interfering with motion and effecting an ankylosis.

The hip and knee joints are most commonly affected by tuberculosis of bone, but it may be found in any of the bones of the body, and in case of acute general tuberculosis cavities may be formed in all of the bones. The X-ray is also of value in locating foreign bodies, such as bullets, surgical instruments, and in showing the position and location of enlarged and displaced organs and fractures.

SECTION III.

THE ACUTE FEBRILE DISEASES.

TYPHOID FEVER.

Definition.—Typhoid fever is also known as enteric fever, abdominal typhus and autumnal fever. It is an acute febrile disease characterized by a general fever and a localized ulcerative inflammation of Peyer's patches of the small intestine.

Adjustment.—The specific adjustment in case of typhoid fever is C. P. or fifth dorsal, K. P. or eleventh dorsal, and upper lumbar, usually the second lumbar vertebra. The adjustment of the fifth dorsal vertebra affects the thermogenetic subsidiary centers, and especially those of the liver, thus decreasing the amount of heat production. The adjustment of the eleventh dorsal vertebra affects the thermolytic subsidiary centers, thus increasing heat dissipation via the skin and kidneys, while the adjustment of the second vertebra affects the local pathological condition of the small intestine, restoring normal function to its parts, which effects its restoration to normal structure.

Pathology.—During the initial stage there is a swelling of the mucous membrane of the small intestine, and especially of the solitary glands. Peyer's patches become greatly enlarged, whitened and raised above the surface of the mucous membrane of the intestine. The blood vessels of the intestinal mucosa are congested and an exudation soon follows. This exudation soon becomes purulent in character because of the necrosis that rapidly ensues. During this stage portions of the glands slough off, leaving deep ulcers at their former sites. During the stage of cicatrization, the connective tissue cells in the floor of the

ulcers begin to proliferate, thus forming scar tissue, which contracts, thus obliterating the former ulcer.

If the amount of destruction in the intestinal walls is great, the scars formed may interfere with the decent of the feces, and obstructive constipation will be the result. The glands that have undergone necrosis are never replaced, hence the intestinal secretions may be diminished or changed in character. Sometimes during the ulcerative stage perforation may occur, with the symptoms of shock or collapse, and a fatal result.

Symptoms.—Typhoid fever begins slowly, with prodromal symptoms of headache, malaise, anorexia, nausea and vomiting, cough, epistaxis and chilliness, but no real rigours; there is pain and aching in the region of the spine, especially over the kidneys, and usually constipation early in the disease, which may turn to diarrhoea later.

During the first week the fever gradually rises, the evening exacerbation increasing each day until by the seventh or eighth day the temperature has reached 104 or 105 degrees.

During the second or third weeks the fever remains high, is of the continued type with slight morning remissions of from one to one and one-half degrees. The remission may occur in the evening and the exacerbation in the morning; it is then spoken of as the inverse type of fever, but is of no clinical importance. Varying from the sixth to the twelfth day of the disease there is the appearance of a rose rash upon the abdomen. This rash consists of macules of 2 to 4 mm. in diameter, of a deep red color, which will disappear upon pressure but immediately become red as soon as the pressure is removed. These spots number less than twenty, are usually confined to the abdomen, and remain present for about five days, leaving a yellowish-brown spot upon disappearing. Very frequently there is a bronchial cough with slight expectoration, moist rales and rapid, shallow respirations. The pulse rate is

accelerated, but usually not to the extent that might be expected from the height of the fever. It may be irregular in beat, weak and dicrotic when the fever is very high.

Diarrhoea is the most constant intestinal symptom, and usually appears during the stage of necrosis, which is toward the latter part of the second week. The stools are purulent in character, containing pus, necrosed epithelium, membrane and glandular tissue. The abdomen is greatly distended by tympanites, and there is great tenderness over the right inguinal region in the right illiac fossa. The spleen is also greatly enlarged and may be tender, but this enlargement is entirely adaptative, as the amount of destructive metabolism in a disease with high fever is very great, and the toxines thus formed have a deleterious effect upon the body. The white blood corpuscles are actively engaged in suppressing this effect, and in order to increase their number the splenic activity is accordingly increased, and a consequent enlargement results. Further, the metabolic breakdown material, and especially the exhausted red cells, are taken up by the spleen, where they undergo disintegration and the haemoglobin is liberated, passes to the liver, where it is utilized in the formation of the bile pigment. This is why splenic enlargement is present in all fevers.

Other symptoms that frequently occur in typhoid are sudamina and urticaria during the eruptive stage, with peeling of the skin during convalescence. Scanty, highly-colored urine, flushed cheeks, dilated pupils, sordes on the teeth, and a heavily coated tongue with a deep longitudinal fissure having small fissures radiating from it, are conditions usually present.

Under medical treatment typhoid may assume different forms, but this is accounted for Chiropractically by the fact that the degrees of pressure upon the nerves may vary, thus producing a variation in the external manifestations or symptoms.

The several forms of typhoid are noted. The ordinary or moderate form is the most common, and has symptoms as described in the preceding pages. Its usual duration is 28 days, but the case may run 42 or 56 days. The grave or severe form has a high temperature, usually amounting to hyperpyrexia with symptoms of the typhoid status. Most cases of this form are fatal. The mild form is characterized by a slight fever rarely exceeding 103 degrees, slight diarrhoea, and few nervous symptoms of a mild type. Abortive typhoid has a rapid onset, beginning with a chill, sudden rise in temperature, with marked symptoms common to the moderate form. The temperature falls by crisis during the latter part of the second week in this form and a rapid convalescence follows. Latent or walking typhoid is characterized by slight fever, languor, anorexia, emaciation, diarrhoea, a few rose spots, and there may be sudden death from intestinal perforation. In any form if the temperature should suddenly drop to 95 degrees or below, an internal hemorrhage has occurred, and will be accompanied with the symptoms of collapse. The Widal test is almost exclusively used today in making a positive diagnosis of typhoid, but of what value is a diagnosis when the disease has to be nursed until it runs its regular course?

Under Chiropractic adjustments the disease does not run its regular course of 28 days, and, in fact, if the adjustment is given in time, recovery is so rapid that often the affection would not be recognized as typhoid 24 hours after it has been given. Under Chiropractic adjustments there are neither complications nor sequelae, while under the ordinary treatment of nursing there may be both. The common complications are intestinal hemorrhage, perforation, peritonitis, pneumonia, and ulceration of the tongue, while the sequelae consists of various forms of paralysis, insanity, nephritis, alopecia, tuberculosis, and frequently aphonia. But even the sequelae yield to the adjustments. We have a good example on record of a boy with aphonia,

whose voice was restored to normal in five weeks adjustments.

Differential Symptoms.—Typhoid may be distinguished from cerebro-spinal meningitis by the sudden onset of the latter, marked cerebral symptoms from the beginning, Kernig's sign, and the absence of abdominal tenderness and diarrhoea. Opisthotonus is common to meningitis and absent in typhoid. The eruption of typhoid occurs during the second week and appears on the abdomen, while the rash of cerebro-spinal meningitis appears between the first and fifth days and soon becomes petechial in character.

Peritonitis resembles typhoid only in its abdominal symptoms—the respiration, course of fever, and Hippocratic countenance in the former will furnish a marked distinction between the two. Concealed suppuration or abdominal abscess will be differentiated by the irregular fever and the presence of leukocytosis.

Typhoid fever has been claimed, and is yet claimed, to be caused by the typhoid bacillus, or the bacillus of Eberth. This bacillus typhosus is a microscopic organism, formerly classed among the infusoria, but now regarded as belonging to the vegetable kingdom. In other words, it is a unicellular plant. Would it not be unreasonable to say that a small single-celled plant is capable of making a vicious attack upon a healthy strong body, and so overpowering that body that it becomes the subject of disease, and possibly dies from the attack? Would it not be the height of danger to go walking in the forest, alone, where there are trees with millions of cells? If a bacillus can do what it is claimed it does, what might be the result of an attack by a shrub or a tree? However, we know that the plants with which we come in contact in our daily life are harmless, this we have learned by experience. Then, why suspect the minute unicellular plant? The germ is our friend, not our enemy. It prolongs our lives in many instances, and is injurious in the following way only:

The second lumbar subluxation impinges the nerves leading to Peyer's patches of the small intestine, thus diminishing the nerve supply (mental impulses), the result being abnormal expression of function or abnormal metabolism in this part of the intestine. Wherever there is abnormal expression of function there is the formation and accumulation of waste products and poisons. These waste products which have accumulated in the tissues of this part of the intestine form fertile soil for the growth and development of these minute unicellular plants. They, having life, must express the manifestations of life, such as growth, reproduction, excretion, etc. These excretions, together with other poisonous products of abnormal metabolism, are absorbed by the fluid circulation in the body, and if the kidneys are then also functioning abnormally and are unable to eliminate all of this excretory material the foregoing symptoms will develop. If the subluxation of the second lumbar vertebra is properly adjusted, the vertebra assuming its proper alignment, the expression of the mental impulse will be normal in the intestine, no waste material will be accumulated, therefore no soil will be present for the growth and development of plant life, and plants will not be able to exist upon healthy, living cells. This brief explanation will also hold true for all other acute, febrile, so-called infectious diseases, hence space will not be occupied with a detailed explanation of each disease.

TYPHUS FEVER.

Definition.—Typhus fever is also known as spotted fever, jail fever, hospital fever, camp fever and ship fever; it is an acute febrile disease, characterized by sudden onset, a maculated rash, and a clinical course terminating by crisis, usually about the end of the second week.

Adjustment.—The adjustment in case of typhus fever is C. P. in combination with K. P. The adjustment of C. P. decreasing heat formation, and the adjustment of K. P. increasing heat dissipation.

Pathology.—There is no localized pathological condition in typhus fever. The fever is high and the eruption appears between the third and fifth day. The eruption consists of macular rose spots which soon become petechial.

Symptoms.—The onset of typhus fever is sudden with a severe chill or recurrent chills, followed by a rapid rise in the temperature. The temperature continues to increase for three or four days, by which time it has reached 104 to 107 degrees. The fever remains high for 10 days or two weeks, during which time there is headache, malaise, cough, a rapid pulse which is often dicrotic, severe pains in the spinal region radiating into the extremities and followed by extreme prostration. The tongue is heavily coated and dry, the coating being white at first, but later, as the temperature increases, it becomes dark brown and is fissured. The facial expression is dull and the face is flushed, eyes are congested and pupils contracted. The digestive symptoms are those common to febrile diseases, such as anorexia, nausea, vomiting, and constipation. The spleen is enlarged, and the urine is scanty and highly colored. Delirium appears early in typhus fever, and this is a differential symptom from typhoid, in which it appears later. The delirium is often of the active type and may be followed by stupor or coma.

In the more severe cases there is carphologia, subsultus-tendinum and coma-vigil. The rash appears first on the abdomen, from whence it spreads to all parts of the body. It consists of macular rose spots about 4 mm. in diameter, which soon become petechial and do not fade upon pressure, as in typhoid. This rash appears between the third and fifth day of the disease, while in typhoid it appears during the second week of the disease. Typhus can further be distinguished from typhoid by the course of the fever, abdominal distention and the Widal reaction of typhoid.

RELAPSING FEVER.

Definition.—Relapsing fever is an acute febrile condition characterized by a definite febrile paroxysm lasting about six days, and followed by a remission lasting about the same length of time. This may be repeated several times, whence its name, relapsing fever.

Adjustment.—The specific adjustment in case of relapsing fever is C. P. in combination with K. P.

Pathology.—There is no localized pathological condition in relapsing fever. The spleen is swollen, but is not pathological.

Symptoms.—The onset of relapsing fever is sudden, with a severe chill and rigor, followed by a rapid rise in the bodily temperature, the fever reaching 104 to 106 degrees. There is intense headache and backache, with aching in the extremities. The pulse is rapid (110 to 130). The spleen is greatly swollen, and may be palpable. When the fever runs high cerebral symptoms are manifest, delirium being the most constant. The fever remains high, usually for six days, but may have remissions of two or three degrees, with sweating. Occasionally a mild jaundice exists. On or about the seventh day the fever falls by crisis, with profuse sweating, to reappear on the fourteenth day. During the week of apyrexia the symptoms disappear, the patient apparently is recovering and may be about, when on or about the fourteenth day there is another chill and rise in the temperature, with a return of all previous symptoms. This relapse is usually of shorter duration, often lasting only four days, after which recovery may take place; however, there may be several relapses, with or without complications. Under Chiropractic adjustments recovery will take place at a rapid rate, as in other febrile conditions.

DENGUE.

Definition.—Dengue, also known as breakbone fever, is an acute febrile affection, characterized by paroxysms of

fever, pain in the joints and muscles, an initial erythema, and a terminal polymorphous eruption.

Adjustment.—The adjustment in case of dengue is C. P. in combination with K. P. Some cases may require local adjustments, as would be determined by spinal analysis.

Pathology.—The joints of the extremities become greatly swollen early in the disease, and this swelling is associated with intense pain. The muscles become stiff (contracted to minimize pain), and the skin is hyperemic.

Symptoms.—The attack begins suddenly with headache, chilliness, and intense aching pains in the various joints of the body. The joints become swollen, red, tender, stiff, and painful upon motion. The pulse is rapid and the respiration short, quick and shallow. The degree of prostration is great, with delirium and possibly other cerebral symptoms. Cutaneous hyperaesthesia is general. The rash may be of various kinds, as is indicated by the term polymorphous, and occurs at no definite time during the course of the disease. In some instances it resembles measles, in others scarlet fever, and in others may be petechial.

The distribution of the rash over the body is not distinctive, as in some cases it may first appear upon the hands and feet, in others upon the abdomen, and in others upon the thorax. Upon the fourth or the fifth day the temperature has reached 105 or 106 degrees and then falls by crisis, with profuse sweating and amelioration of all symptoms, especially the pain. The apyretic period lasts two to four days, after which there may be recurrence for two or three days. The entire attack usually lasts less than two weeks.

Differential Symptoms.—Dengue is a disease of warm climates and may be mistaken for yellow fever, but in the latter there is a characteristic icteric tint to the skin, which occurs early in the affection, a slow pulse, with high fever and black vomit, which, with the absence of cutaneous eruption, is sufficient to form a differentiation. Dengue differs

from acute rheumatism, in that it has no eruption; acid sweats and the course of the temperature in rheumatism is decidedly different.

CEREBRO-SPINAL MENINGITIS.

Definition.—Cerebro-spinal meningitis is an acute febrile incoordination in which there is an inflammation or excessive heat of the meninges of the brain and spinal cord. It is also known as cerebro-spinal fever, spotted fever and petechial fever.

Adjustment.—Atlas or axis, with C. P. and K. P.

Pathology.—The meninges become swollen and hyperaemic early, and especially is this true of the two inner membranes. This is followed by an exudation of serum into the intermeningeal spaces, most marked at the base of the brain. The cranial and spinal nerve roots may be affected in this same manner as they leave the brain and spinal cord. There may be an engorgement in other organs of the body during the course of this disease, but such is only an associated condition not belonging to it.

Symptoms.—A severe chill with rigor marks the onset of the disease. This is followed by a rapid rise in the temperature to 101 to 104 degrees, intense occipital headache, spinal pain and tenderness, and possibly convulsions in children.

The muscles of the back and neck are hyperaesthetic and stiff, soon amounting to cervical retraction or opisthotonus. There are usually marked sensory disturbances, such as photophobia and hyperacusis, strabismus, nystagmus, ptosis, and irregularity in the size of the pupil may exist. The cerebral symptoms of delirium, stupor and coma may appear early and are always present. Petechia is the most constant and common cutaneous symptom, and appears from the first to the fifth day, does not disappear upon pressure, and may be associated with herpes, erythema or urticaria. Some of the joints may be involved, amounting to a diffuse arthritis. The eyes are intolerant to light, and the senses

of smell, taste, and hearing may also be affected. Kernig's sign is the principle diagnostic symptom of the condition. It is the inability to extend the leg when the thigh is flexed upon the abdomen. The test is usually made with the patient lying in the recumbent posture; the thigh is then flexed upon the abdomen and extension of the leg attempted by lifting or tension on the heel. If cerebro-spinal meningitis is present the leg cannot be extended, and the pelvis may be raised from the bed by the attempted extension. The temperature and pulse rate are irregular. The respiration may be of the Cheyne-Stokes character. The spleen is swollen, and a leukocyte count will show a leukocytosis, affecting principally the polymorphonuclear cells. Cerebro-spinal meningitis, like many other diseases, may take on various forms, among which are the malignant or severe form. The malignant form usually has a fatal termination in a few days, is marked by symptoms of great depression, and finally sudden collapse. The abortive type begins suddenly, terminates suddenly, and the patient usually recovers.

INFLUENZA.

Definition.—Influenza, which is also known as la-grippe, grip, and catarrhal fever, is an acute febrile condition characterized by slight fever, coryza and severe prostration, which is out of proportion to the height of the temperature.

Adjustment.—Since there are several forms of influenza, the adjustment will vary according to the form. In all forms C. P. and K. P. should be adjusted. In the respiratory form middle and lower cervical with upper dorsal should be included. In the gastro-intestinal form S. P. and upper lumbar should be included. In the nervous or cerebral form the atlas or axis should be included.

Pathology.—There is no localized pathology other than the inflammatory condition of the respiratory and alimentary mucous membranes, which is accompanied with its characteristic exudate.

Symptoms.—Often the onset is abrupt, with chilliness or chills, which may be recurrent, and a sudden rise in the temperature. The fever is variable in its course and is often of the remittent type. There is extreme drowsiness, malaise, headache, and general aching in the spine and extremities. The patient soon becomes very weak or prostrated, with anorexia, nausea, vomiting, restlessness, cough, watery eyes, sneezing and coryza. The hearing may become affected from the swelling and closure of the eustachian tube. The pulse is quick and compressible, with increased frequency in the respirations. The symptoms are usually so grouped that the attack is said to be the respiratory form, gastro-intestinal form, or the nervous form. In the respiratory form the respiratory symptoms usually predominate, and the foregoing symptoms may be greatly exaggerated. The nervous form is characterized by delirium or stupor, with great debility and nervousness. The gastro-intestinal form has diarrhoea, abdominal pain, anorexia, nausea and vomiting, which may be persistent in character, a heavily coated tongue, foul breath, and possibly biliousness.

Bacillus Pertussis PERTUSSIS OR WHOOPING COUGH.

Definition.—Pertussis is an inflammatory condition of the respiratory mucosa, distinguished by a convulsive cough and a long-drawn inspiration, during which time the characteristic "WHOOP" is produced.

Adjustment.—Vertebral palpation will reveal subluxations in the lower cervical region, S. P. and K. P., all of which should be adjusted in case of pertussis.

Pathology.—There is swelling and hyperaemia of the mucous membrane of the nose, pharynx, larynx and bronchial tubes, with diminished secretion, followed by an increased abnormal secretion of mucus, which rapidly becomes muco-purulent. The severity of the case depends upon the amount of swelling in the mucous membrane, the degree of

obstruction offered to the passage of air into the lungs, and the purulence of the exudate.

Symptoms.—The symptoms of whooping cough are divided into three stages—catarrhal, paroxysmal and recuperative.

The catarrhal stage begins the same as an ordinary case of coryza, with sneezing, cough, watery discharge from the nose, which soon becomes muco-purulent, and if a child, usually more or less fretfulness exists. This stage usually lasts for eight or ten days, when it gives way to the—

Paroxysmal Stage.—Throughout the catarrhal stage the cough was of the bronchial type, dry and continuous, but now it assumes a distinctive paroxysmal character. This paroxysmal cough begins with a series of short coughs followed by a long drawn inspiration, during which time the whoop is produced. There may be several successive paroxysms of cough followed by the expectoration of a thick, creamy, viscid mucus, part of which may have been swallowed and will produce vomiting. The number of paroxysms may vary from one every five or six hours to two or three every hour, and continues for four or five weeks in the average case.

During the seizure of cough the face becomes deeply cyanotic, swollen and congested; the veins may stand out prominently upon the forehead and neck, and the eyeballs project. The eyes become congested, puffy, and the lids become pinkish; the conjunctiva may show petechia, and there may be attacks of epistaxis during the strain of coughing.

During the recuperative stage the cough lessens in frequency of occurrence and in severity. The amount of expectorate increases in quantity and the cough is loose. These symptoms gradually decrease until they disappear, the entire stage occupying about two weeks.

PAROTITIS.

Definition.—Parotitis, which is also known as mumps, is an inflammation or excessive heat of the parotid gland, which is characterized by swelling, tenderness, and stiffness of the jaws.

Adjustment.—Subluxations are found in the middle cervical region, usually the fourth or fifth, and S. P. If fever is present, also adjust K. P. and C. P.

Pathology.—There are swelling and inflammation of one or both parotid glands, often also involving the cellular tissue around and pervading the gland. The inflammation is catarrhal in character, begins in the ducts of the gland and rapidly extends to the gland proper. The infiltration of the serous fluid into the surrounding tissue often produces enormous swelling of the face and head, which subsides in eight or ten days. Occasionally the submaxillary gland, the ovaries or the testicles are involved.

Symptoms.—The onset of mumps is rather sudden, with general lassitude and slight fever, but in many cases the first noticeable symptom is earache or a dull aching pain about the angle of the jaw, which is increased by the taking of acid into the mouth, as, for instance, sour pickles. There may also be headache, loss of appetite and vomiting, but frequently the pain and swelling are the only noticeable symptoms. The swelling appears within 24 hours after the beginning of the pain around the ear, and at first is unilateral, usually on the left side. Within two or three days the swelling appears on the other side, and may be so extreme that it is difficult to recognize the patient. Mastication may be greatly interfered with, and it may become necessary for the patient to diet upon liquid food for a few days. Often swallowing, speaking and hearing will be impaired during the swelling of the gland. In the more severe cases the temperature may reach 104 degrees, and the duration of the affection last much longer than the usual, which is about

ten days. When orchitis develops there is swelling of the testicle, preceded by a sickening pain which soon assumes a drawing character. This may last a variable length of time, but under adjustments the pain subsides within a few hours and the swelling gradually disappears. Ovaritis is a much more infrequent complication of mumps, and is associated with abdominal tenderness and pain upon deep respiration. The abdominal muscles become fixed, the respiratory movement is vertical, and the thighs may be flexed upon the abdomen. Two very unusual cases were brought before the P. S. C. clinics recently in which the entire vulva was enormously swollen, also the mamary glands. Both cases yielded to the Chiropractic adjustments.

VARIOLA OR SMALLPOX.

Definition.—Smallpox is an acute febrile disease, characterized by eruption, which passes through four stages, the papular, vesicular, pustular and crust.

Adjustment.—The specific adjustment in case of smallpox is C. P. and K. P. in combination with local subluxations, as the symptoms of the case may indicate.

Pathology.—There is no localized pathological condition in smallpox. The general skin eruption is pathological. (See symptoms.)

Symptoms.—There are three forms of smallpox: 1. The discrete or moderate form. 2. The confluent or severe form. 3. The hemorrhagic, malignant or black smallpox, of which there are two varieties, purpuric and hemorrhagic pustular forms.

The discrete form begins suddenly, with recurrent chills and a rapid rise in the bodily temperature. There is intense headache, pains in the back over the kidneys which shoot down the legs. In children there are frequently convulsions in place of the recurring chills. The fever reaches 103 to 104 degrees within a short time, and delirium may

be present during the first four days. The face is flushed, eyes bright, pulse and respirations increased, the pulse ranging from 100 to 130. The degree of prostration is very great early in the disease. The bowels are usually constipated, while the urine is scanty and highly colored. On the third or fourth day of the fever the eruption appears, first upon the forehead, lips and wrists as large, coarse macules, which rapidly become papular, so that the first stage is commonly known as the papular stage. These papules feel like shot under the skin upon palpation. With the appearance of the rash the other symptoms abate to a very marked degree. The fever then becomes remittent, and may entirely disappear early during the eruptive stage. Upon the fifth or sixth day the papules become vesicles, containing a clear serum and having slightly umbilicated centers. These vesicles become pustules on the eighth or ninth day, when the serum is transformed into pus and the pustule is non-umbilicated. The skin around the pustule is deeply red and swollen, while all of the intervening skin is reddish. The stage of desiccation begins on the tenth or twelfth day, when the pustules dry up, forming scabs. These scabs fall off about the end of the third week, leaving pits or scars.

During the pustular stage the fever again returns and is known as the fever of suppuration. Throughout the crust stage the fever subsides by lysis, reaching the normal temperature by or before the eighteenth day.

Confluent smallpox is also known as the severe form. Its initial symptoms are about the same as those of the discrete form, except that the temperature may be higher. During the eruptive period the papules are more numerous and soon coalesce, although the confluency may not take place until the pustular stage. Frequently there are eruptions on the mucous membranes, with offensive discharges. Cerebral symptoms are common in this type, the most constant being delirium, stupor and coma.

Malignant or hemorrhagic smallpox is the most severe form, having a high mortality. There are two varieties—

Black or Purpuric Smallpox begins with high fever, lumbar pain, extreme prostration, and upon the second or third day a diffuse ecchymosis occurs beneath the skin and conjunctiva. The ecchymosis spreads until the greater part of the body is covered, giving it a dark or blackish color. There are hemorrhages from the mucous membranes, and death is usually the result, occurring within a week from the onset.

Hemorrhagic Pustular Smallpox proceeds like an ordinary severe case until the pustular stage, when hemorrhages occur into the pustules and from the mucous membranes. This form is also fatal. Both types of the latter form are rare and not common in America.

Smallpox can be distinguished from chicken-pox, in that the eruption of the latter usually appears upon the thorax instead of upon the face. The vesicles vary in size, are oval in shape, are superficial, and do not have a reddened areola. They appear in successive crops, so that by the fourth day papules, vesicles and pustules can be seen. The constitutional symptoms are mild. No fever of suppuration.

VARICELLA OR CHICKEN-POX.

Definition.—Chicken-pox is an acute febrile disease, characterized by mild fever and a vesicular eruption, which desiccates and desquamates in from three to five days.

Adjustment.—C. P. and K. P.

Pathology.—The skin eruption consists of small vesicles, which are entirely superficial and rarely coalesce. The vesicles are filled with a clear serum and dry up within three to five days after their appearance.

Symptoms.—The onset is usually sudden, with chilliness, slight fever, anorexia, vomiting, and aching in the back

and legs, but in many cases these initial symptoms are absent, and the first noticeable symptom is the appearance of a vesicular eruption on the chest or elsewhere on the trunk. The vesicles are preceded by papules, but the papules become vesicles within a few hours, so that the papular stage is not always distinctive. The vesicles are discrete or scattered, ovoid in shape, with flattened tops which are sometimes umbilicated. They contain a clear fluid which becomes cloudy in two days. The crusts are dark brown in color and form during the third to fifth days. Desquamation occurs within a week without leaving pits or scars. As a rule varicella is readily recognized.

VACCINA OR VACCINATION.

Definition.—Vaccina is a form of eruptive incoordination resulting from the introduction of vaccine virus into the human system by inoculation.

Adjustment.—A. P. or local with K. P.

Poisons are continuously being formed as by-products of metabolism in the body. This poison is being eliminated from the body by the excretory apparatus as rapidly as possible, hence no serious effects are noticed because of their formation. There is no time at which the body does not contain some of this metabolistic poison, and has so adaptated itself to this amount. But should more poison be introduced into the human system than can be properly eliminated by the kidneys, it will have a poisonous effect upon the body, and will give rise to symptoms of disease. This is the case in vaccination. In many very healthy people the vaccination will not "take" the first time, but by increasing the dose the second time it will have the desired (?) effect. This is because a greater quantity of poison has been introduced into the system than can be eliminated, or than the body can adapt itself to, hence the appearance of symptoms, and symptoms do not occur in health, only disease.

Symptoms.—Two or three days after inoculation a papule appears at the point of inoculation, and gradually increases in size until the sixth day it is an umbilicated vesicle containing a clear serum. By the tenth day this serum suppurates or becomes purulent, and the vesicle is transformed into a pustule. In two or three weeks desiccation begins. During the pustular stage there is usually some fever, swelling of the arm, axilliary glands, and frequently a swelling of the entire extremity with its lymphatic glands. By the third week the crust has completely formed, and falls off within the following two weeks, leaving a deep scar or pit.

It is not an uncommon thing to have serious complications with vaccination, such as multiple abscesses, erysipelas, tetanus, eczema, syphilis, leprosy, ulcerations, gangrene, and the disease of smallpox itself frequently occurs after a vaccination. What could be more dreaded than such a list of complications? And who can tell which of them may occur? Often the arm is amputated in order to save the life, but the poison has been scattered throughout the body, and it is but a short time before it breaks out elsewhere. The only safe precaution is to prevent the inoculation. The vaccination is more fatal than the disease it is supposed to prevent.

SCARLATINA.

Definition.—Scarlatina is also known as scarlet fever. It is not a mild form of scarlet fever, but is the disease itself. It is an acute febrile disease characterized by fever and a diffuse scarlet exanthem, which disappears with desquamation.

Adjustment.—C. P. and S. P., both of which may be the same vertebra, in combination with K. P. and possibly lower cervical, as will be determined by vertebral palpation and the symptoms that may indicate such.

Pathology.—The skin is the seat of an acute inflammation, which fades away upon pressure and after death. The

throat is also greatly inflamed, and may be the site of ulcerations. Granular degenerations may occur in the liver, spleen, kidneys and muscles.

Symptoms.—The disease is initiated by a chill and a rapid rise in the bodily temperature, the fever reaching 103 to 105 degrees. The throat is swollen and sore, causing dysphagia. A vomiting noted for its persistency is an important initial symptom. The pulse rate is rapid (110 to 140), and in 24 hours the rash appears, first upon the chest and neck, but spreads over the entire body within a few hours. From a distance the skin appears to be uniformly red, but upon close inspection the eruption is found to consist of minute closely set red spots. Occasionally the rash rises in patches, and may become papular in form. There may be petechia and ecchymosis, and occasionally sudamina. The rash remains bright red for about a week, when it gradually fades away, after which desquamation begins and lasts from two to six weeks. With the appearance of the rash the throat symptoms become prominent. Swallowing is difficult, there is pain and tenderness in the throat and jaws, and inspection reveals a catarrhal inflammation of the pharnyx and tonsils. At first the tongue is covered with a heavy white fur, through which extends the swollen red papillae, giving to it the characteristic strawberry appearance. Within a few days the fur exfoliates, leaving the tongue bright red, after which it is known as the raspberry tongue. The spleen is somewhat enlarged, and headache, restlessness and insomnia are usually present. Nocturnal delirium is present in the more severe cases. The urine is scanty, highly colored and often albuminous. The fever declines on the fourth to sixth day by lysis, and convalescence is slow but gradual.

Anginoid scarlet fever is marked by a predominence of the throat symptoms, with high fever and great prostration. Early this form resembles diphtheria and tonsillitis. It is distinguished from diphtheria by the appearance of the

rash and the strawberry tongue, and from tonsillitis by the condition of the tongue plus the course of the temperature.

Malignant scarlet fever is characterized by convulsions, delirium, muscular twitching, a very high fever of 107 to 108 degrees, a weak, irregular heart and symptoms of collapse, which may occur before the appearance of the rash.

MEASLES OR RUBEOLA.

Definition.—Measles is an acute febrile condition characterized by an initial coryza and a rapidly spreading macular eruption.

Adjustment.—C. P. and K. P. in combination with middle or lower cervical region for the respiratory catarrh.

Pathology.—The only pathological condition met with in measles is a catarrhal inflammation of the mucous membrane lining the respiratory passages.

Symptoms.—Measles begin with chilliness, sneezing, drowsiness, cough, which at first is dry but later becomes loose, and is accompanied by expectoration. The eyes are watery, the conjunctiva is reddened, and photophobia is also a prominent symptom. There is headache, nausea and vomiting during the early stages, after which the fever rises gradually during the first two days, then remits for a few days, usually two, but appears again with the appearance of the rash. The rash is macular in form. The macules are from two to four mm. in diameter, and are first noticed on the face, from which they spread to all parts of the body. This gives to the skin a mottled or blotchy appearance. When the eruption has reached its height it is most marked upon the trunk, and disappears upon pressure.

About the sixth to eighth day the fever falls by crisis, and the symptoms lessen in severity. The rash fades, and finally desquamation occurs in fine scales and is spoken of as a brany scaling. The eyes remain very sensitive to light. The sense of taste is lost, and the ears may still be sensitive

to sound, but this gradually diminishes as strength is regained.

In black measles the rash becomes hemorrhagic, or may consist of petechial spots which increase in size, finally forming ecchymosis. The mortality in black measles is high.

GERMAN MEASLES OR RUBELLA.

Definition.—Rubella is an acute febrile disease of moderate severity, characterized by a mottled macular rash and a mild initial coryza.

Adjustment.—C. P. and K. P., with local for the respiratory catarrh.

Pathology.—The mucous membrane of the nose, throat and bronchi is inflamed, red, swollen, and has a catarrhal exudate. The skin is covered with a macular rash. Macules are small and of a dark red color.

Symptoms.—Rubella is initiated by a sore throat, chilliness and a slight fever, headache and backache radiating down the legs. There are slight coryzal symptoms, but not so severe as in rubeola. The rash appears upon the first or second day, and may be the first symptom to manifest itself. It is first noticed upon the face, from whence it spreads to all parts of the body within 24 hours.

Character of the Rash.—The rash consists of slightly elevated, rounded or oval, and usually discrete, spots which are of a rose-red color. A macular eruption also appears upon the mucous membrane of the throat, and lasts for the same length of time as the skin eruption, which is from three to five days. The desquamation is brany. The site of each macule is marked by a small brown spot of pigment, which gradually fades. Often the cervical glands are swollen, but, as a rule, the constitutional symptoms are light, and the characteristic eruption with very slight fever may be all the symptoms noticed.

Differential Symptoms.—Measles is distinguished from German measles by the severe initial coryza, Koplik's spots, higher fever, marked constitutional symptoms and longer duration of the former. The rash of measles is also darker in color and the macules are larger in size.

DIPHTHERIA.

Definition.—Diphtheria is an acute febrile incoordination characterized by a fibrinous exudate from the mucous membrane of the throat, which forms a false membrane.

Adjustment.—S. P. and K. P. with lower cervical, including 4th cervical in the nasal type.

Pathology.—There are three forms of diphtheria, named according to the location of the false membrane. They are pharyngeal, laryngeal and nasal. The pathological condition is the same in each except in location.

At first there is a swelling and redness of the mucous membrane, congestion of its blood vessels, and increased secretion of a thick viscid mucus. The redness covers the entire mucous membrane and is accompanied by an exudation, which at first may be localized in one or more patches, all of which soon coalesce, forming an extensive membrane which covers the entire mucous surface.

The exudate contains much fibrin, which forms a network, in the meshes of which are contained pus corpuscles, epithelial granular cells, mucus and albumin. It is of a gray or white lead color, and cannot be stripped off without leaving a bleeding surface. It is commonly spoken of as coagulation necrosis.

About the ninth day a process of suppuration occurs beneath this false membrane, separating it from the mucous membrane and causing it to slough off.

Symptoms.—The onset is sudden, with chilliness, headache, pain in the back, aching in the extremities, and a

sudden rise in the bodily temperature to 103 or 104 degrees. The throat is inflamed and sore, with marked dysphagia. The adult symptoms depend upon the location of this false membrane.

In pharyngeal diphtheria the tonsils and fauces are swollen and red, resembling tonsillitis, the glands of the neck may be enlarged and tender, and the neck may be stiff. Shortly the exudate will appear upon the mucous membrane of the tonsils, gradually spreads until it reaches the pillars of the fauces, the uvula and the posterior pharyngeal wall. The membrane is closely adherent to the mucous membrane and cannot be striped off without leaving a bleeding surface. The membrane may present such a degree of obstruction that the patient may suffocate, but this does not occur so frequently as it does in the laryngeal form.

About the eighth or tenth day suppuration occurs beneath the false membrane, so that it sloughs off and is expectorated, after which recovery is rapid. In a few cases the exudate is confined to the tonsils and is called lacunar, or tonsilar diphtheria. It resembles tonsilitis, and is usually differentiated by a microscopical examination.

Laryngeal diphtheria is also known as membranous croup. In this form the false membrane forms upon the mucous membrane of the larynx, and may be an extension of the pharyngeal type. The leading symptoms are a croupy cough, hoarseness or aphonia, dysnoea, and signs of progressive laryngeal stenosis. The face may become deeply cyanosed, the respiratory muscles retracted, and the patient in a state of intense restlessness.

The sterno-mastoid muscles are prominent, assisting in the labored breathing, and the nares may be dilated. Shreds of the membrane may be coughed up, after which there may be relief for a short time. If the membrane extends downward into the bronchi, complete stenosis may occur, from which the patient suffocates.

Nasal diphtheria is usually an extension of the pharyngeal form and is associated with it. There is mouth breathing, offensive and bloody discharges from the nose, epistaxis, high fever and extreme prostration.

Diphtheritic paralysis is the most common sequel of diphtheria, and may follow any of the three forms. It occurs in 10 to 15 per cent of the cases, usually during the stage of recovery. This is only a toxic neuritis, and will disappear as soon as the toxines are eliminated from the body. It usually affects the uvula and soft palate, and is characterized by nasal voice, regurgitation of food through the nose, dysphagia, and disorders of taste and hearing.

ERYSIPELAS.

Definition.—Erysipelas is an acute febrile, localized, serous poisoning, characterized by a specific inflammation and swelling of the affected part.

Adjustment.—The adjustment for facial erysipelas is 4th cervical in combination with C. P. and K. P.

Pathology.—Local cutaneous redness, with swelling and edema, produced by an infiltration of serum in the subcutaneous tissues of the face, are principal structural changes noticeable in the disease.

Symptoms.—Facial erysipelas is by far the most common form, and is initiated by a severe chill or chilliness, followed by a rapid rise in the bodily temperature to 103 or 105 degrees. This is accompanied by prostration, dry coated tongue, feeble heart action and delirium. Gastric symptoms, such as anorexia, nausea and vomiting, are often common. A small red spot is then noticeable upon the bridge of the nose, and expands to the cheeks, forehead and ears. The reddened area becomes swollen, the skin is red, glossy and tense. The swelling around the eyes may be so great as to obstruct vision. Small vesicles appear upon the swollen area and may be accompanied by a burning pain. The

cervical glands become swollen, and the throat is red and sore. The fever remains high with slight remissions for seven or eight days, when it terminates by crisis with profuse sweating. Upon the disappearance of the fever the swelling subsides and desquamation follows. Occasionally the accumulated serum beneath the skin undergoes suppuration, and an abscess is formed at the angle of the jaw. If this complication arises there is an irregular fever, inability to open the mouth, weakness and emaciation. The affection rapidly yields to adjustments, even though in the last mentioned stage.

TOXAEMIA.

Definition.—Toxaemia is a form of blood or serous poisoning, resulting from the absorption of poison from some local lesion or pathological condition. Ex.—Diphtheria, typhoid, erysipelas or tetanus. Sapraemia is a form of toxaemia, due to the absorption of putrified toxines.

Adjustment.—C. P., K. P. and local, depending upon the location of the pathological condition from which the toxines are being absorbed.

Symptoms.—Toxaemia begins with general malaise, weakness, restlessness, headache and slight fever. Of these the fever is the most pronounced and constant symptom. The pulse is rapid and weak. There is usually a leucocytosis and the symptoms of the pathological condition from which the toxines are being absorbed. It is of marked importance to note that toxaemia begins with slight chilliness, and not a severe chill and rigor.

PYEMIA.

Definition.—Pyemia is an incoordination in which there is the absorption of pus from suppurative or other pathological condition, such as ulcerations or abscesses.

Adjustment.—C. P., K. P. and local.

Pathology.—Pyemia is usually associated with multiple abscesses. The blood vessels in the surrounding area of the abscess will become inflamed, their lining endothelium will become thickened, and they may become obstructed by thrombi. The most common locations of the abscesses are liver, spleen, kidneys and lungs.

There will be no nerve tracing for the general pyemic condition, but local tracings may be made to the abscess.

Symptoms.—The onset of pyemia is marked by a severe rigor and chill, which is followed by a rapid and high rise in the bodily temperature, the fever reaching 103 to 105 degrees.

The fever is very irregular in its course, being suppurative in its type and having intermissions, during which time there are sweating and recurrent chills. The chills, high fever and sweating recur at irregular intervals. There is usually anorexia, nausea and vomiting. The urine is scanty and highly colored, the bowels are costive, the tongue is coated, the skin is hot and dry, the pulse is feeble and rapid, there is great prostration, weakness, and the skin may be moderately discolored from toxemic jaundice.

If the hyperpyrexia is prolonged the patient will become delirious, stuporous or comatose, from which it is impossible to arouse him.

In most cases the local symptoms of the associated condition can be recognized long before there are any symptoms of pyemia, and in cases where the primary condition is abscess, it is usually found that the abscesses are multiple, being located in various organs of the body.

The cardinal symptoms of pyemia are irregular chills, fever and sweats, together with the discovery of a primary focus of suppuration or pus formation. In pyemia, delirium and coma occur as a late symptom, while in septicemia they appear early.

SEPTICEMIA.

Definition.—A form of blood or serous poisoning occurring without any pathological condition, with or without any known avenue for entrance of poison into the body. This may follow wounds, surgical operations, etc.

Adjustment.—C. P., K. P. and local, if wound occurs.

Symptoms.—These may occur following a wound of a rusty nail, vaccination very frequently, surgical operations made with filthy instruments, and after childbirth.

The onset is sudden with a sensation of chilliness and a moderate rise in the bodily temperature. The fever is usually of the continued type, but may have decided morning remissions. There are headache, anorexia, nausea, vomiting, and an early delirium. The pulse is small and rapid, the tongue becomes dry and brown, the spleen becomes enlarged, and there is a general enlargement of the lymphatics in the locality of the part affected. There may be red streaks radiating outward from the local condition, and a general congestion of the part.

The early prostration, delirium and coma are characteristic symptoms of septicemia. There may also be a slight toxemic jaundice, petechial spots on the skin and albumen in the urine.

YELLOW FEVER.

Definition.—Is an acute febrile incoordination characterized by toxemia of varying intensity, jaundice, and a marked tendency to gastric hemorrhage.

Adjustment.—C. P., S. P., K. P., and the atlas should be carefully examined and adjusted, if subluxated.

Pathology.—The general fever produces abnormal metabolism, increasing the bulk of the metabolic break-down material in the body, thus increasing the work of the spleen and causing its enlargement. There is an inflamma-

tion of the mucous membrane of the bile ducts, with swelling of the membrane, which diminishes the size of the lumen and produces jaundice. There is malnutrition of the blood, which results in disintegration of the red blood cells. Various forms of granular degeneration may occur in the viscera. Hemorrhages occur from the vessels of the mucous membranes, especially those of the stomach.

Symptoms.—The symptoms may be divided into three stages—the initial, remission, and collapse.

The initial or first stage begins with chilliness, or more suddenly with a chill, and is followed by a rapid rise in the bodily temperature to 100 or 106 degrees. This is accompanied with severe headache, pain and aching in the back and limbs, a sore throat, a coated tongue which becomes brown and fissured, epigastric tenderness, nausea and vomiting.

The face is flushed, the eyes are red and congested and are extremely sensitive to light, the eyelids and lips are swollen and thickened, and a very slight subicteric tint is noticeable in the conjunctiva and skin.

The stage of remission is marked by a decided remission or possibly an intermission in the temperature and a decrease in all of the symptoms. The fever may fall by crisis during this stage and recovery occur, but usually the fever again rises in two or three days and the remission gives way to the stage of collapse.

With the second rise in the bodily temperature the skin becomes deeply bronzed or jaundiced, there is severe vomiting, the vomitus often being of a black color and consisting of altered blood, which has partly undergone digestion, lost its oxygen and become black in color. There may be epistaxis or bleeding from the gums, the appearance of petechial spots on the skin, and scanty urination, the urine containing blood. In rare cases the urine may be completely suppressed, and the result is uremia.

The signs of collapse become prominent and herald death. The pulse is small, rapid and easily compressible, the respirations are accelerated and shallow, the face is pale, the temperature is low, possibly sub-normal; there is an anxious expression on the face, and finally death. Otherwise the fever terminates by lysis in two or three days.

DYSENTERY.

Definition.—An acute inflammatory incoordination of the mucous membrane lining the intestines, characterized by the frequent discharge of blood-stained mucus, tenesmus and griping.

Adjustment.—C. P., K. P. and local in the lumbar region, according to the part of the intestine affected. This is usually the lower part of the small intestine or the colon, therefore would be the second lumbar vertebra.

Pathology.—The colon is the most frequently affected, and at the beginning its mucous membrane becomes swollen and its vessels congested. This is due to the excessive heat, which produces a relaxation of the muscular fibres of the vessel walls, increasing the lumen of the vessel, decreasing the velocity of the blood and permitting a slow osmosis of serum into the surrounding sub-mucous tissues. The follicles of the colon become swollen, and may become the site of ulcers. There is a profuse exudation of abnormal or transformed mucus from the mucous membrane, which, when hemorrhages occur, is blood stained.

Nerve Tracing.—Tenderness is noticeable from the lumbar foramen to the region over the colon, becoming diffuse over the abdomen.

Symptoms.—There are five forms of dysentery, or bloody-flux, as it is sometimes called. They are: Catarrhal, acute specific, amoebic, diphtheric, and chronic.

Catarrhal Form.—This begins with a moderate diarrhoea, which lasts so long as there is fecal matter in the

intestines. After two or three days griping abdominal pains appear, and the stools are increased in frequency, consisting of a catarrhal mucus. There is much straining and great tenesmus. At first the stools are partly fecal, but later become mucus or muco-purulent and are blood stained. There is a constant feeling of rectal fullness, pressure and a sensation of bearing down in the pelvis. There is usually a slight fever of 102 degrees, thirst is excessive and is a cardinal symptom, the pulse becomes rapid and weak, and the individual may become greatly prostrated from the frequent and painful evacuations. The number of stools may vary from 10 or 12 to 200 per day. The patient loses a great deal of flesh, and though the condition may last only one or two weeks, it may require several weeks or months before strength is regained.

Acute Specific Form.—This is a tropical form and does not occur with any degree of frequency outside of Japan and the Philippine islands. The onset is sudden, with coliky abdominal pains. The stools are of a serous consistency at first, but soon become mucoid and blood stained. Tenesmus is constant; the fever is moderate and accompanied with anorexia, nausea, weakness, thirst, scanty or dark colored urine, coated tongue and foul odor of the breath. This form may be fatal within 48 hours, or recovery may begin within two or three days, but the usual course of the affection is 15 to 20 days. Recuperation is slow.

Amœbic Form.—This form has a very gradual onset with an increasing diarrhoea, fever is slight and may be absent, there is griping and tenesmus at the onset only, and at the beginning the stools are frequent and very fluid, later becoming yellowish-gray in color and containing blood and mucus. There is gradual and steady loss of flesh and strength, and anemia may develop. The course of this form is as if it were sub-acute and lasts from six to twelve weeks. The patient recovers slowly because of the extreme emaciation and anemia which has occurred.

Diphtheric Form.—This form of dysentery is characterized by the formation of a pseudo-membrane upon the mucous membrane of the intestine, and most frequently forms in the colon. The onset is similar to the catarrhal form, with a moderate diarrhoea, anorexia, nausea and vomiting, tenesmus, griping, and a slight fever. As soon as the false membrane forms in the colon there is severe abdominal pain localized at the point where the false membrane is formed. Then the evacuations become less frequent, and the stool will contain portions of the false membrane that has sloughed off from the intestinal wall. If the membrane does not slough off, intestinal obstruction may result, with fecal vomiting and collapse. The false membrane is detached from the mucous membrane by a process of suppuration occurring between them. During this period there is high fever and, possibly, delirium and stupor.

Chronic Dysentery.—This is a prolongation or continuation of the acute variety, and in the United States is usually of the catarrhal type. There is no fever in the chronic form, the stools may vary in number from 4 to 20 in 24 hours. They are usually yellowish-brown in color and may be frothy. At times they may be blood stained, and not uncommonly ulcers form upon the mucous membrane of the colon. Tenderness is traceable over the region of the colon to the lumbar region of the spine. The individual becomes weak and emaciated, and more or less constantly tired. In chronic diarrhoea the stools do not contain blood, and there is no tenesmus and griping, all three of which are conditions present in dysentery, or bloody-flux.

CHOLERA-ASIATICA.

Definition.—An acute febrile incoordination, characterized by severe purging and a rapid collapse.

Adjustment.—C. P., K. P. and second lumbar.

Pathology.—The mucous membrane of the intestines becomes inflamed and swollen; Peyer's patches are enlarged

and swollen; the blood vessels are congested, and there is exudation from the mucous membrane, consisting of mucus, serum, fibrin, and destroyed epithelium from the functionating glands of the intestine, and from its villi and lining membrane. The basement membrane of the intestinal glands is left exposed. The stomach and intestines contain large quantities of a thin milk-like fluid, which is effused from their lining membrane.

Symptoms.—The symptoms are usually grouped into three stages—

First Stage.—Begins with coliky abdominal pain and a moderate or severe diarrhoea, with headache, mental depression, nausea, vomiting, and great weakness or debility. If the patient should recover during this stage the condition is called cholerine.

Second Stage.—Is also called the stage of collapse, and is marked by persistent vomiting of a thin watery or serous fluid resembling the stools, which in this stage also become serous in character and are evacuated usually without pain, but there may be tenesmus at times. The tongue is dry and coated, and thirst is excessive. The patient rapidly becomes exhausted and weak, the skin becoming cold, clammy and shrunken, the lips and fingers cyanosed, the face pallid, the eyeballs recede, the surface temperature is far below normal (95), while the internal temperature, taken per rectum, may be 104 degrees. Mental disturbances are common, the patient lying in a stupor or coma during the entire stage. This stage, as a rule, lasts two or three days, after which the third stage supervenes. Death may occur during the second stage. The stage of reaction is marked by an increase in the surface temperature, increase in the flow of urine, return of color to the face, the increasing strength of the pulse, and the deeper respirations. The stools become less frequent, take on a fecal character, and the patient gradually recovers.

The second stage is considered the grave stage, and usually lasts two or three days, death or recovery taking

place at the expiration of this time, depending upon the general condition of the patient, and this in turn depends upon the degree of pressure upon the nerves, shutting off a great or a small quantity of mental impulses.

Chiropractic adjustments will release this compression upon the nerves, thereby restoring the proper flow of vital energy to the affected parts, and coordination results.

BUBONIC PLAGUE.

Definition.—An acute febrile incoordination of very rapid course, characterized by inflammation and enlargement of various glands; carbuncles and hemorrhages.

Adjustment.—C. P., K. P. and lower lumbar region.

Pathology.—The inguinal and other lymphatic glands become swollen and congested and soon suppurate, discharging pus externally, or the pus may be absorbed internally. Hemorrhages occur beneath the skin and into the cavities lined with mucous membrane. Carbuncles appear upon the gluteal muscles and upon the back and legs.

Symptoms.—The initial symptoms are headache, backache with stiffness in the muscles, vertigo, mental depression, rapid respiration, epistaxis and hemoptysis. After 24 hours duration the adult or secondary symptoms are apparent. They begin with a chill and a rapid rise in the temperature to 104 or 106 degrees. There is intense thirst, the tongue is dry and brown, and there are nausea, vomiting and delirium. Minute subcutaneous hemorrhages, known as petechiae, occur and may become so large that they are called ecchymoses. Varying from the second to the fifth day the inguinal glands become swollen, forming the buboes, from which the disease gets its name. The axillary, cervical and popliteal glands may also become swollen. The glands undergo suppuration, the pus being discharged externally, or may be absorbed and eliminated through the kidneys. Carbuncles form upon the lower spinal muscles, hips, and upon the legs.

The internal form is marked by similar eruptions occuring upon the mucous membranes, and hemorrhages from the mucous membranes, from which death suddenly results. The mortality varies from 75 to 90 per cent.

MALARIAL FEVER.

Definition.—Malaria is an acute febrile condition characterized by an intermittent or a remittent fever.

Adjustment.—C. P., K. P. The adjustment at C. P. decreases heat generation and the adjustment at K. P. increases heat dissipation, and increases elimination of toxines.

There are two forms of malaria common, the intermittent and the remittent forms.

Intermittent Form.—Its symptoms may be divided into three groups, viz.: Those of the chill period, fever period, and sweat period.

The chill period begins with malaise, languor, headache, gastric uneasiness, nausea and vomiting. The chill begins abruptly, with violent shaking, chattering of the teeth, coldness of the skin, cyanosis of the face and hands, and a rapid pulse. Internally there is a high fever, which is soon manifest externally and gives rise to the fever period. The fever reaches 105 to 106 degrees, the skin is excessively hot and reddened, the tongue is coated, the breath is foul, the bowels are constipated, the spleen is enlarged, and formerly was called the "ague cake" because of its great size; the skin may have a dark tinge, and there may be delirium, stupor or coma.

The fever falls by crisis after a duration of two to six hours, with profuse sweating, after which the patient feels relieved. Paroxysms of these three periods occur with a great deal of regularity every day, or every second or third day.

The Remittent Type.—This is so called from the type of its fever, which is remittent rather than intermittent. The fever is subject to marked remissions of one or two degrees, which occur with a varying degree of regularity. The fever begins suddenly, with a single initial chill. There is a great deal of prostration, petechia and ecchymosis, with cerebral symptoms also present. Delirium is the most persistent cerebral symptom. Malarial cachexia develops in most all cases, giving to the skin a dark brownish color, and this is a cardinal symptom of the disease.

This cachexia is due to the inability of the excretory organs to properly eliminate the waste materials from the body, and as a result the blood becomes deprived of proper nutrition, is subjected to the presence of toxines, and, therefore, undergoes disintegration. This throws an increasing amount of work upon the spleen and causes its adaptative hypertrophy. After recovery the spleen may remain enlarged and tender. The mortality of this form is much greater than in the intermittent form.

ACUTE RHEUMATIC FEVER.

Definition.—An acute febrile condition in which there is a multiple arthritis attended by great pain.

Adjustment.—C. P., K. P. and local for the extremities affected.

Pathology.—The joints, usually the wrists, ankles, elbows and knees, are the site of the inflammation. They become red, swollen from edema, and tender. The synovial membrane is especially affected, so that the movement of the joint produces great pain, and to minimize this pain the muscles remain contracted.

The synovial membrane may become permanently thickened, the bones may become deformed and the joint may become stiff from the exostosis and ankylosis that frequently results from the inflammatory process.

Symptoms.—The fever is preceded by a sensation of chilliness, or by a severe chill, with rigors, malaise, aching pain in the joints, sore throat, anorexia, nausea, and perhaps vomiting. The fever rises suddenly to 102 or 104 degrees, with its attending symptoms of debility, costiveness, spinal aching, hot dry skin, scanty and highly-colored urine, and digestive disturbances.

This usually affects the wrist, ankle, elbow and knee joints, but may affect all the joints of the body. They become hot, red, swollen, tender and painful upon motion. The inflammation seems to be in the tissues around the joint rather than in the joint. The synovial fluid is suppressed in secretion, and the muscles adjacent to the joint are contracted so as to prevent motion, thus minimizing pain. The fever runs an irregular course, and at times there is sweating. The sweat is highly acid, as can usually be determined by the odor, or by gliding the fingers over the skin. The urine is scanty and highly colored, containing much acid; the acidity being over forty degrees. The bowels are constipated, the tongue is furred, and sudamina appears upon the skin around the joints affected.

The course may be acute, recovery taking place after a few weeks duration, or it may be sub-acute or chronic. In the chronic cases the fingers, wrists, ankles and other joints affected become permanently deformed and stiff.

LOBAR PNEUMONIA.

Definition.—An acute febrile condition characterized by a catarrhal inflammation of the mucous membrane lining the bronchial tubes and their communicating air cells, with consolidation of the cells affected. This disease is also called adult pneumonia, lung fever, unilateral pneumonia, Frank pneumonia, and acute pneumonia.

Etiology.—Subluxation at Lu. P. The adjustment should include C. P. and K. P.

Pathology.—The pathology of pneumonia may be divided into three stages, viz.: First, or stage of engorgement; second, or stage of red hepatization; third, or stage of gray hepatization.

The first stage begins with the onset of the disease or as soon as there is excessive heat in the mucous membrane of the bronchi, which produces a relaxation of the muscular fibres forming the walls of the capillaries, resulting in their dilitation and hyperemia. The velocity of the blood stream is diminished, and there is a slow vascular exudation upon the mucous surface. The lung substance becomes swollen and non-elastic. Expansion is diminished and a section of the engorged lung is heavier than the normal.

The second, or stage of red hepatization, is so named because the exudate not only contains mucus, serum, fibrin, albumen and destroyed epithelial cells, but also contains red blood cells in large quantities, which gives to the exudate a reddish color. This red exudate fills up the terminal bronchioles and communicating air cells, producing the condition known as consolidation. The consolidated part is confined to one or more lobes of one lung; there is non-expansion of this part, and when a section is placed in water it sinks, indicating an increase in the weight of the lung structure.

The stage of gray hepatization occurs upon suppuration of the exudate, whereupon the red cells undergo disintegration, the haemoglobin is re-absorbed and the remains of the erythrocytes are transformed into pus corpuscles. This process takes from the exudate the red color, leaving a grayish or pus color to the cross section. A large portion of the exudate is coughed up and expectorated during this stage, and the remainder is absorbed and eliminated through the kidneys. In the stage of gray hepatization the lung structure is heavier than in any other stage, always sinking when placed in water, and is opaque to the rays of the X-ray.

Nerve Tracing.—Tenderness is traceable from the 10th intervertebral foramen on the side affected, outward under the scapula and axilla, becoming diffuse over the region of the lung affected.

Symptoms.—The onset is usually sudden with a prolonged chill and rigor, which is followed by a rapid rise in the bodily temperature. There is general aching, headache, and a short, dry cough, which is suppressed on account of the thoracic pain which it produces. There are usually stitch pains around the nipple, under the axilla or beneath the scapula, which is directly over the area of the lung affected by the inflammation. The respirations are rapid and shallow, the pulse is full and strong and fast, the nostrils are dilated in breathing, and the face is flushed on the cheek of the affected side.

The cough increases and soon is accompanied by expectoration of the characteristic variety, made so by the mixing of blood with the mucus exudate. This expectorate is very viscid and adhesive, and is sometimes spoken of as a rusty sputa. Herpes labialis occurs in most all cases, and is a symptom of some diagnostic importance. The tongue is furred; there is anorexia, nausea and some vomiting. The urine is scanty and highly colored, and there is retraction of the upper abdominal muscles. There may be tympanities and swelling of the abdominal glands.

The pain is more severe when the pleural aspect of the lung is affected, and may be noticeable in the region of the nipple, axilla or scapula. After the third day the expectoration becomes very copious, is of a rusty or prune-juice color, and gives some relief when expectorated.

Upon inspection it will be seen that expansion is deficient in the affected side upon inspiration, or if it should occur that the affection is bilateral, this deficiency will be seen on both sides.

The patient usually lies upon the side affected, so as to facilitate expansion of the unaffected side. The accessory

muscles are brought into play to assist in breathing, as will be seen upon inspection of the chest and neck. The sterno-mastoids stand out prominently during inspiration.

The fever usually falls by crisis after having been of the continued type for a week. With the fall in the temperature the expectoration is increased, strength is regained, exudation ceases, and absorption of exudate occurs from the mucous membrane of the lungs. From this on recovery is progressive, except in those cases in which the consolidated area remains so. In this event suppuration may take place, the consolidated area undergo necrosis, and an abscess will form. The symptoms then will be that of abscess of the lung. (See section on diseases of the lung.)

There are different forms of pneumonia, which are all dependent upon the different nerves impinged and the degree of pressure upon them.

Typhoid pneumonia is a form which is very severe in character, and in which the typhoid status supervenes. In this the cerebral symptoms predominate, consisting of delirium, prostration, stupor, coma, subsultus-tendium, and carphologia.

Latent pneumonia is a form which is mild in character, and the symptoms of which do not appear until the stage of consolidation is reached.

Abortive pneumonia is a form in which the duration is less than the usual week and recovery is rapid.

Central pneumonia is so named because the consolidation begins in the center of a lobe. In this form pleurisy pain at the onset is not present.

Wandering or creeping pneumonia is a form in which consolidation spreads from lobe to lobe, affecting an entire lung.

Obstructive pneumonia is a form in which the circulation of the blood through the capillaries of the affected

area of the lung is hindered. This is produced by the pressure of the exudate in the air cells against the wall of the blood vessels, and is favored by the position of the patient. The part of the lung thus consolidated and in the lowest level is the part which becomes congested, and the congestion is known as hypostatic congestion.

The gastro-intestinal form is so named because of having many and prominent gastric and intestinal symptoms. There are deep-seated abdominal pains along the costal margins, and signs of diaphragmatic pleurisy.

Hepatization is the changing of a substance so that it resembles the liver in appearance. In pneumonia this is brought about by the oozing of blood from the pulmonary capillaries into the consolidated material, giving to it a reddish purple color. After the red cells lose their oxygen they become darker, and more closely resemble the liver in appearance.

The adjustment produces sweating, with a lowering of the temperature; stops the exudation, and the patient regains strength. The exudate is expectorated, breathing becomes normal, and the patient recovers in less than half the usual time.

TUBERCULOSIS.

Definition.—Tuberculosis is an acute or chronic affection characterized by the formation of tubercles, which have a tendency to unite and undergo caseous, fibroid and other degenerative changes. The lungs are most frequently affected, but tuberculosis may exist in any part of the body, in any organ, or may exist generally throughout all of the tissues.

The disease is given different names, according to the different forms and location of the tubercles. There are three forms of acute miliary tuberculosis, viz.: The general or typhoid form, the acute tubercular meningitis, and acute miliary tuberculosis of the lungs.

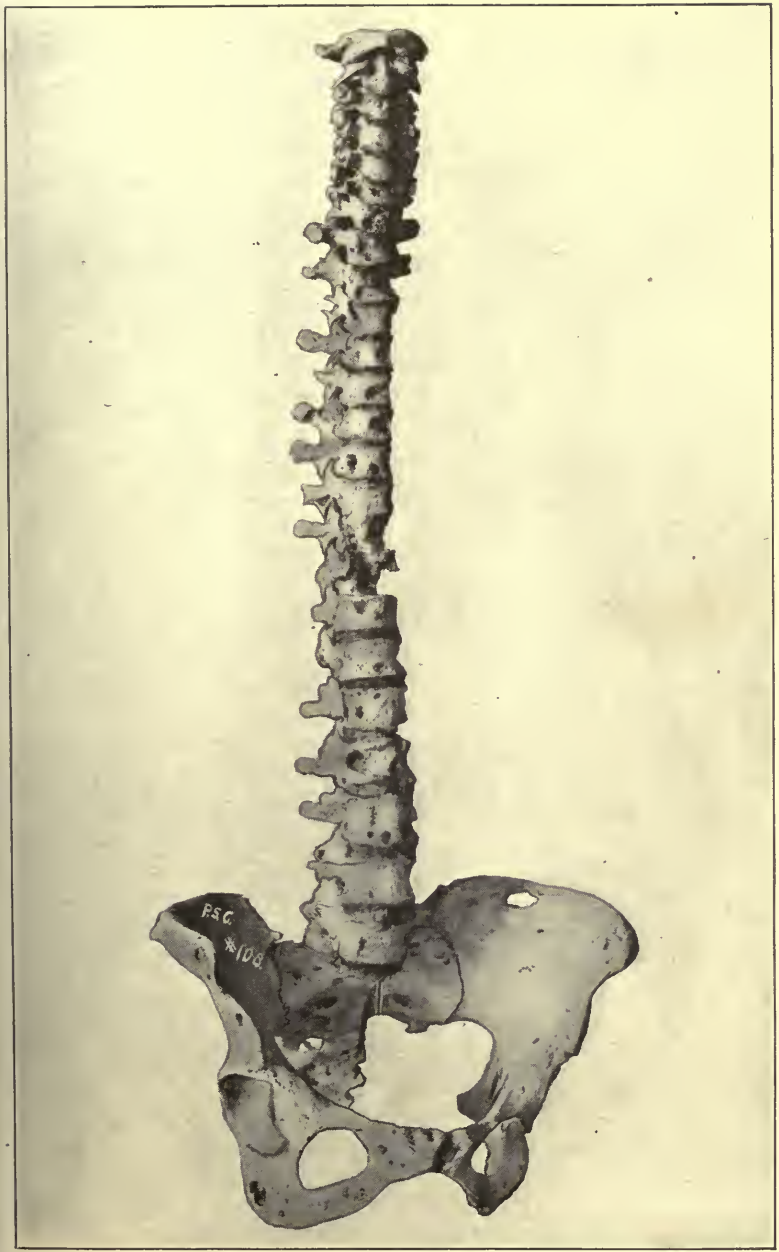


Fig. 5.—*Showing tubercular destruction of spine and pelvis in case of acute general tuberculosis.*

THE GENERAL OR TYPHOID FORM OF TUBERCULOSIS.

Definition.—An acute form of tuberculosis in which the tubercles are scattered throughout the body in all tissues, and in which the symptoms of the typhoid status predominate.

Adjustment.—C. P., K. P. and possibly atlas.

Pathology.—The tubercle is the principle pathological structure in all forms of tuberculosis, and in this form they are found scattered and infiltrated throughout all the tissues of the body, including the bones and muscles. During the early stages the tubercles are small and microscopic in size, but soon coalesce, forming larger nodules. When examined with the microscope they are found to consist of a mass of cells undergoing a process of degeneration. In the center of the mass is a large multinucleated cell called the giant cell, from which there radiate fibres forming a network, in which is deposited epitheloid cells, large, small and polynuclear leucocytes, fibrin, serum, albumen and granular derbis. This entire mass is constantly changing, the process being called caseation, or cheesy degeneration, and is characteristic of all forms of tuberculosis.

Symptoms.—Since the pathology is not localized, there are no marked local symptoms in any particular organ. The disease begins with malaise, languor, lassitude, spinal aching, and chilliness or a severe chill, which is followed by a rapid rise in the bodily temperature to 103 or 104 degrees. The fever is of the remittent type, having remissions daily exceeding two degrees; the pulse is rapid and feeble, the respirations are accelerated and shallow, the face is flushed, the tongue is heavily coated and brown in color, the spleen is enlarged and tender, the urine is scanty and highly colored, and cerebral symptoms predominate.

The symptoms of the typhoid status supervene, and this is why this form is called the typhoid form of tuberculosis.

Delirium is the most prominent and constant cerebral symptom, and may be accompanied at times by stupor, coma, carphologia, subsultus-tendinum or coma-vigil, the three latter symptoms being considered grave. The entire duration may vary from two to four weeks, and upon death will be found multiple tubercular cavities in the bones of the body and, also, in the soft structures. The cavities are filled with pus, the product of tubercular decay.

ACUTE TUBERCULOUS MENINGITIS.

Definition.—An acute suppurative inflammation of the meninges of the brain and spinal cord, in which there is the formation of tubercles.

Adjustment.—Atlas in combination with C. P. and K. P.

Pathology.—The tubercles may be scattered throughout the entire meninges, and are of the same pathology as in the preceding variety. They are most numerous in the endothelium of the vessels of the meninges at the base of the brain, and for this reason the disease is sometimes called basilar meningitis. The meninges become thickened, swollen and nodular. The press upon the spinal cord interfering with its function. Degeneration takes place within the tubercles, they giving off an exudation which accumulates in the intermeningeal spaces.

There is no definite nerve tracing in meningitis, as tenderness is very great in severity, and is so diffuse that it is called hyperaesthesia.

Symptoms.—The prodromal symptoms consist of anorexia, nausea, vomiting and general irritability. The head aches, the body loses flesh, sleep is poor, digestion is imperfect, and after a duration of one to eight weeks, the fever is ushered in with a chill and rigor, or a severe convulsion.

The fever reaches 102 or 103 degrees and runs an irregular course, usually being of the remittent type. Dur-

ing this febrile stage the headache, which is usually occipital, is intense; the pulse is rapid and irregular, the hyperaesthesia along the spine is very marked; there are muscular contractions, cervical retraction and opisthotonus. The pupils are contracted; nystagmus, strabismus or ptosis may be present, and as a result of pressure upon the spinal cord by the swollen and nodular meninges, paralysis may occur. This paralysis may be in the form of a monoplegia, paraplegia or a hemiplegia. Should the process of degeneration occur with great rapidity in the basilar meninges, an abscess of the brain will result, and death follow. The termination is with the symptoms of collapse, the breathing is of the Cheyne-Stokes type, and the duration after the rise in temperature is usually from two to four weeks.

ACUTE MILIARY TUBERCULOSIS OF THE LUNGS.

Definition.—An acute form of tuberculosis, in which there is the formation of miliary tubercles throughout both lungs.

Adjustment.—Lu. P., C. P. and K. P.

Nerve tracing.—Tenderness is traceable from the tenth intervertebral foramen outward over the course of the tenth pair of spinal nerves, following a course along the intercostal spaces, under the axilla, and becoming diffuse over the anterior of the chest.

Pathology.—The tubercles form in the lining membrane of the terminal bronchioles and in the endothelium of the pulmonary vessels, and have the same microscopical pathologic consistency as that described under the general form. In the center of the tubercle is the giant cell, and accumulated in the meshes of the radiating fibres are found the epitheloid cells and the leucocytes. There is a thick, viscid secretion from the membranes affected.

Symptoms.—Preceding the onset, which is sudden, there may have been a chronic cough with scanty or absent ex-

pectoration, rapid breathing upon exertion, and slight pain in the chest.

The onset of the acute attack is always sudden, with a sensation of chilliness, and followed by a rapid rise in the temperature to 102 or 104 degrees. The pulse is rapid and dicrotic, cough increases and is accompanied by mucopurulent expectoration, which is also very viscid and adhesive. The respirations are rapid and shallow, the face is flushed, cyanosis develops, the spleen is swollen and tender, and the leucocytes are increased in number. Upon inspection it will be found that the chest is sunken, the supraclavicular and infraclavicular spaces are large, the ribs approximate each other, the scapulae project and expansion is deficient. An asthmatic hump may be observable in the upper dorsal region, a subluxation of the third dorsal vertebra will be found upon vertebral palpation, and tenderness is traceable from this point to the region affected. The duration may be very brief, often lasting only one or two weeks.

PNEUMONIC PHTHISIS.

Definition.—This is also called chronic catarrhal pneumonia, and is a catarrhal inflammation of the mucous membrane of the lungs in which there is the formation and caseaous degeneration of tubercles throughout one or both lungs.

Adjustment.—Lu. P., C. P. and K. P.

Nerve Tracing.—This is the same as the preceding form.

Pathology.—At the onset the tuberculous area may be limited to a small portion of one or more lobes of the lungs, and in the majority of cases is located in the apices of both lungs. The tubercles have the same pathologic consistency as previously described. They appear in the membrane lining the terminal bronchioles and the pulmonary arterioles.

The lung tissue between the tubercles is greatly congested, and gives off a catarrhal exudate, which has a tendency to consolidate the air cells. The tubercles undergo a process of softening or caseation. This form of softening is also known as cheesy degeneration. The tubercles increase in number and area affected until the entire lung is involved, and it is not infrequent that the pleura is also involved by the tuberculosis.

Symptomatology.—This may be acute or chronic. The acute cases begin suddenly, with severe cough, muco-purulent expectoration and a high fever of 103 or 104 degrees, which is of the remittent type. There is anorexia, indigestion, emaciation, weakness and great shortness of breath. During the night there may be profuse sweats, followed by great exhaustion. This type may run a course of two to four weeks.

If the course is sub-acute the duration may be extended to one year. The fever is much lower, and is of the intermittent type, being present in the afternoon and evening only. There is more marked emaciation, cough, expectoration, deficient expansion of the lungs, night sweats, and hemoptysis.

The chronic form begins slowly, with a chronic bronchial cough that is very persistent and accompanied with a scanty muco-purulent expectoration. All attacks of coryza seem to settle upon the lungs, as the patient will say. Chills, fever and pain in the chest become prominent symptoms later, and blood stained sputa is expectorated. Rales are prominent and will vary in kind with the extent of the bronchi affected.

Later the expansion is deficient, the chest becomes sunken, respirations are hurried and shallow, vocal fremitus is increased, and weakness becomes distressing. Emaciation has occurred to such an extent that the patient is unable to get around, and the night sweats and expectoration are very profuse. Duration is about two years.

CHRONIC PULMONARY TUBERCULOSIS.

Definition.—A very common incoordination of the lungs in which there are the formation and degeneration of tubercles, and characterized by fever, cough and emaciation.

Adjustment.—Lu. P., C. P. and K. P.

Nerve Tracing.—Same as preceding forms in which the lungs are affected.

Pathology.—The tubercles are first formed in the apex of one lung, and that usually the right, after which they may spread, involving the major portion of one or both lungs.

The tubercle is of the same consistency as that in the other forms of tuberculosis. It first appears upon the mucous membrane of the bronchioles or the endothelium of the arterioles as a grayish-white granulation about the size of a millet seed. In the center is the giant cell, which in a few cases is absent. Around the giant cell is a layer of epitheloid cells, which are always present and are characteristic of tuberculosis. Surrounding the layer of epitheloid cells are several layers of leucocytes, having different sized and shaped nuclei. Between these various layers of cells are fibres projecting in all directions, in the meshes of which are the cells and exudative material. The tubercle thus described then undergoes cheesy necrosis or caseation, in which the lung structure wherein the tubercles exist is destroyed. Several of the tubercles may unite, forming a tubercular nodule. The exudation accumulates in the cavities formed by the degeneration and is coughed up, at times being streaked with blood. If the tubercles are numerous and cover a large portion of the lung it may be rendered functionless, and is often spoken of as being "gone." However, cases so diagnosed have fully regained the function of such a lung under Chiropractic adjustments.

Symptoms.—The symptoms are divided into two stages, the incipient stage and the advanced stage. While in the

incipient stage the disease is often called incipient phthisis, and while in the advanced stage, it is called chronic phthisis or consumption.

The incipient stage makes its onset insidiously, the patient being unable to recall when the first signs of the trouble began; in fact, he does not realize that he is the subject of tuberculosis until the symptoms are well advanced. Usually the patient has had a chronic, dry cough of long standing, perhaps years, a poor appetite and general weakness. This weakness steadily increases, with languor, malaise, pallor of the face, and difficult breathing upon exertion. The cough is more pronounced during the morning, and is accompanied by a scanty, glairy expectoration. As the case advances the expectoration becomes more copious, the cough more frequent, and there may be hemoptysis, or at least the sputa will be blood streaked at times. On inspection it will be noticed that the chest expansion is diminished and that the ribs are close together. These symptoms are much more pronounced at a later period of the disease.

The advanced stage is marked by a severe cough, which is continuous throughout the day, but is more marked in the morning; profuse muco-purulent expectoration, which is often blood streaked, and at other times is greenish or gray; severe anorexia and vomiting. Hemoptysis, often large, from the erosion of a pulmonary vessel, is common during this stage. Pain in the chest is common when the tubercular inflammation affects the pleura, the pain being produced by the two inflamed surfaces of pleura being in contact during the respiratory movement of the lungs. The respirations are greatly quickened, the pulse is rapid, 120 to 150, the temperature varies from sub-normal to fever. The fever is one of the hectic type, being present in the afternoon and evening. Anemia develops, night sweats are very common, and are followed by extreme weakness. The cheek on the affected side is flushed, or both may be flushed; emaciation is marked and tubercular cachexia develops.

Upon inspection the clavicle, scapula and ribs are very prominent, giving rise to the characteristic phthisical chest. The supraclavicular and infraclavicular spaces are prominent and deep, the ribs are close together and the scapulae project, making the patient stoop-shouldered; there is a rounding of the shoulders and a marked prominence of the upper dorsal vertebrae. Later the heart and kidneys become affected, producing edema of the ankles, indicating venous stasis. If the affection is unilateral there will be an adaptative curvature of the spine in the upper dorsal region, whose concavity will be toward the affected side.

Because of the Lu. P. subluxation the lungs become tubercular. Function is abnormally expressed in them, the result of which is disease, and in this case the disease is tuberculosis. The adjustment of the vertebral subluxation at Lu. P. restores normal function to the lungs, giving to them more strength with which to carry on their normal work and increasing their resisting power to disease. As soon as function is expressed normally no waste metabolic material accumulates and undergoes degeneration, and that which has accumulated prior to the adjustment is readily absorbed and eliminated by the kidneys. K. P. is adjusted merely to make the kidneys stronger and more normal, so that they are able to meet the additional demand made upon them in the excretion of the poisons absorbed from the diseased areas. Throughout the later stages of tuberculosis there is fever, which is the product of destructive metabolism. This is largely controlled by C. P., hence its adjustment in tuberculosis.

FIBROID PHTHISIS.

Definition.—A form of tuberculosis which is localized in one lung, and whose area of degeneration is surrounded by a strong fibrous wall of connective tissue. This is also known as sclerosis of the lung and cirrhosis of the lung.

Adjustment.—Lu. P. and K. P.

Pathology.—This form of tuberculosis is unilateral and the tuberculous condition is localized in a small circumscribed area which is encapsulated in a dense growth of connective tissue. The area inclosed by the capsule of fibroid tissue is rendered functionless, hence the chest wall collapses.

Nerve tracing is the same as in other unilateral affections of the lung, the tenderness being traceable from the tenth intervertebral foramen on the affected side and leading outward under the axilla, becomes diffuse over the area of the lung affected.

Symptoms.—The onset is very slow, and the incoordination runs a very long course, frequently 20 years.

The first symptom is cough, which is chronic and of long standing, being worse in winter and when aggravated by coryza, and absent or slight during the summer months. Later it becomes worse and is paroxysmal in character, is accompanied by muco-purulent expectoration. The paroxysms occur with greater frequency during the mornings. There is dyspnoea upon exertion, and the chest expansion is greatly diminished on the affected side. Upon inspection the affected side is sunken, the shoulder becomes lower, and the spine is curved, the concavity of the curvature being toward the affected lung. The heart is displaced by the shrinking of the affected lung and the compensatory enlargement of the unaffected one. These symptoms gradually increase in severity with emaciation, weakness and pallor, and in the later stage, with irregular fever. Its long duration and unilateral character distinguish it from the other forms of tuberculosis.

TUBERCULOSIS OF THE PERITONEUM.

Definition.—An inflammatory incoordination of the peritoneum, characterized by the formation and degeneration of tubercles.

Adjustment.—The adjustment must be made locally in the lumbar region, depending upon the location of the affected part, and will be determined by vertebral palpation. Also adjust K. P.

Pathology.—Tubercles having the same pathological consistency as previously described form upon the peritoneum and rapidly coalesce, forming large tubercular nodules. These nodules may be localized, covering a small portion of the peritoneum, or may be scattered over a large area, and form large nodules, which can be readily palpated, and in thin patients these nodules can be seen, as they give to the abdominal wall an irregular shape.

Nerve Tracing.—The course of tenderness leads outward from the lumbar foramen, over the crest of the ilium, becoming diffuse over the nodules or the part of the peritoneum affected.

Symptoms.—These begin with abnormal sensations, possibly amounting to pain, in the abdominal region, and may be localized or general. The abdomen is tender under palpation, and is distended by gas. Digestion is affected by the tubercular nodules pressing upon the intestines, and gaseous distention; the bowels may be either constipated or there may be diarrhoea, emaciation is marked and gives to the abdomen an enormous appearance, as it is distended by gas and by an effusion of serum. The nodules are palpable and feel like tumor-like masses near to the median line of the abdomen. Adhesions form between the layers of the peritoneum affected and of the intestines. The mesenteric and other lymphatic glands are enlarged and intra-abdominal hemorrhage occurs when there is erosion of blood vessels by the tubercular necrosis. Finally the intestinal walls become involved, the intestine becoming obstructed and presenting the symptoms of acute intestinal obstruction. Toward the late stages there is fever ranging from 102 to 104 degrees, persistent vomiting, consisting of the contents of the stomach at the onset, later consisting

of bile, and finally of faeces or bile having a fecal odor. With the fecal vomiting the symptoms of collapse appear, and death is sudden.

TUBERCULOSIS OF THE URETER, PROSTATE GLAND AND BLADDER.

If the ureter is the site of tubercular degeneration there is pain extending diagonally across the abdomen. The pain begins in the back around the kidneys, and this may be an extension of a renal tuberculosis. There is blood in the urine and also the presence of pus and destroyed epithelium. Casts of the ureter may be discovered and can be unraveled with needles when placed under water.

If the bladder is involved there is hyperacidity of the urine and great vesicle irritability. The urine is voided frequently and in small quantities, there is hematuria, and the destroyed epithelium from the bladder wall passes off with the urine. Pain is localized in the hypogastric region, and tenderness is diffuse over this region.

When the prostate gland is affected it becomes enlarged and presses upon the prostatic portion of the ureter and hinders urination. The gland can be palpated upon digital examination of the rectum and is found to be enlarged. Urination is slow and painful, and at times the urine may be retained in the bladder for an abnormal length of time, producing great discomfort to the patient. The pain is located immediately above the pubic bone and may be severe in the region of the rectum. When the bladder or prostate gland are involved the adjustment is at 4th lumbar and K. P.

When the testicles are affected they become immensely swollen, and may result in an erosion of the scrotum. They are painful and congested. Usually determined by the tuberculous diathesis, tuberculous cachexia, microscope and above symptoms. The adjustment is lower lumbar and K. P.

When the ovaries or fallopian tubes are affected the adjustment should be made at the third lumbar and K. P. There is pain in the inguinal region, accompanied by emaciation and enlargement of the adjacent glands. Fever may be slight and irregular, and the tubercular cachexia may develop. This may lead to abscess formation with the discharge of pus, which is blood stained, through the vagina.

TUBERCULOSIS OF THE CERVICAL GLANDS.

Adjustment.—Locally in the cervical region in combination with K. P. The local cervical adjustment restores the normal transmission of mental impulses to the cervical glands, which results in normal function. The excessive heat subsides and the process of degeneration is checked. The material that has already accumulated as a result of the previous destructive inflammation is gradually absorbed and eliminated from the body through the various excretory channels, and the adjustment of K. P. assists in the rapid elimination of this.

Pathology.—In the early stages small gray granulations are present and may be visible to the naked eye. They gradually increase in size, becoming tubercles and undergoing a process of caseation. When a section is examined under the microscope the various histological structures of the tubercle can be plainly seen, consisting of the giant cell in the center and surrounded by the epitheloid and lymphatic cells. The giant cell is large and has many nuclei, the epitheloid cells are also larger than the leucocytes, and have a large vesicular nucleus.

Interlacing back and forth throughout this tubercle are fibres of connective tissue which extend to the periphery of its structure and form a surrounding capsule.

The tubercles first appear or form in the cortical substance of the gland, and as they increase in number the distinction between the cortical and medullary portions is lost.

The entire gland becomes enlarged and indurated; tubercular nodules form and suppurate, and the pus thus formed frequently collects, forming an abscess, or is drained by a permanent sinus.

Nerve Tracing.—The tenderness is diffuse from the cervical foramen over the entire part of the neck affected.

Symptoms.—The sub-maxillary salivary gland is frequently the first to be affected, but in many cases the affection may be limited to the lymphatic glands, and the salivary glands remain unaffected. Of the cervical lymphatics, the first to be affected are the lateral and posterior chains, later and more rarely, the anterior group. At first they enlarge, become hard and are palpable. The enlargement steadily increases and they soon coalesce, becoming firmly matted together, and make the neck stiff or limit its motion. During the early stages, when the glands are separate, they will vary in size from the size of a white bean to that of an olive, but after coalescing they form large masses, possibly as large as the hand. The affected glands usually undergo suppuration, the pus being discharged through a fistula or sinus externally, or it may be in such small quantities that it is absorbed and eliminated through the excretory apparatus.

The patient becomes emaciated and debilitated; the skin is pale, the eyes are pearly, and the tubercular cachexia finally develops. Irregular hectic fever with night sweats characterize the late stages of the affection.

TUBERCULOSIS OF THE KIDNEY.

Definition.—An abnormal condition of the epithelium of the kidney, in which there is inflammation, and the formation and degeneration of tubercles.

Adjustment.—The specific adjustment in tubercular pyelitis or tubercular nephritis is K. P.

Pathology.—The tubercles, having the same consistency as those previously described, are located upon the mucous

membranes of the pelvis, and of the uriniferous tubules. The tubules are obstructed and the mucous membranes are destroyed, portions of them being sloughed off and passed with the urine. If they coalesce the kidney becomes immensely enlarged and nodular.

Nerve Tracing.—Tenderness can be found emitting from the lower dorsal foramen and becoming diffuse over the region of the kidney.

Symptoms.—During the early stage of the tubercular formation the symptoms are latent, but soon the condition is characterized by pain in the back over the region of the kidney, and is very tender upon palpation. Visceral palpation reveals an enlarged kidney, which may have an irregular shape. Urination is very frequent and the urine contains destroyed epithelium, pus, mucus and blood. In the later stages there are marked emaciation, debility, chills, irregular fever and sweats. The kidneys may finally become exhausted and unable to excrete, the result being uremia, with coma and death.

Tuberculosis may occur in any part of the body, depending upon the part of the spine where the vertebral subluxations exist, the functions which they inhibit, and the relative degree of pressure which they produce. Tuberculosis often exists in the liver, spleen, mammary glands, supra-renal capsules, brain and spinal cord, and is frequently localized in bone.

FEBRICULA OR EPHEMERAL FEVER.

Definition.—A simple fever of a few days duration, terminating by crisis from the first to eighth day.

Adjustment.—C. P. and K. P. The adjustment at C. P. decreases heat production and the adjustment at K. P. increases heat dissipation and elimination of poisons from the body. There is no localized pathology, hence no nerve tracing.

Symptoms.—The onset is abrupt, with headache, flushed face, dry and coated tongue, excessive thirst, anorexia, nausea and vomiting. The fever may be preceded by a sensation of chilliness, after which it is of the continued type and varies from 100 to 105 degrees. The bowels are usually constipated, and the urine is scanty and highly colored, the skin is dry and hot, and there may be herpes labialis. If the fever is high, cerebral symptoms may be present, consisting of delirium and stupor.

The fever terminates by crisis within a week, or immediately upon receiving the proper adjustment.

TETANUS.

Definition.—An acute febrile incoordination characterized by tonic spasms of the muscles, which steadily increase in intensity.

Adjustment.—Atlas, C. P. and K. P.

Symptoms.—The onset begins with headache, spinal pain and stiffness of the neck muscles, which symptoms are followed by a slight rise in the bodily temperature. Later the temperature may become very high, reaching 106 to 108 degrees. The masseter muscle is affected early, and its contraction produces a condition known as lackjaw or trismus. If the risorious is contracted the risus sardonicus is produced. The head is drawn back, and later the contraction involves the entire spinal muscles, producing opisthotonus or emprosthotonus. Occasionally the respiratory and laryngeal muscles become tonically contracted, producing intense cyanosis.

ANTHRAX.

Definition.—A malignant form of localized serous poisoning of rapid course, characterized by fever and the formation of pustules.

Adjustment.—C. P., K. P. and local in the zone of the eruption.

Pathology.—The only pathological condition that exists in anthrax is the pustule, or elevation of tissue containing pus. The pustule usually forms upon or at the site of an abrasion of the skin and is inflammatory in character. The surrounding tissue is swollen and red, and the neighboring lymphatics are enlarged.

Symptoms.—This is also known as hostler's disease, rag picker's disease, wool sorter's disease and weaver's disease. There are two forms, the internal and external form. The internal form is very severe and usually fatal, and begins with a sudden chill, followed by a rapid and high rise in the bodily temperature to 105 degrees. The pulse is rapid and weak; there is vomiting, diarrhoea, and extreme prostration. The patient passes into the typhoid status, with delirium, stupor and coma, and death results within 24 hours.

The external form begins with the formation and appearance of a small painful papule upon the skin, which grows in size at a rapid rate and forms a vesicle containing a bloody serum. This bloody serum becomes putrid and soon breaks, leaving a deep-seated ulcer situated upon a swollen and indurated base. Red lines radiate outward from the ulcer, following the course of the lymphatic vessels; the fever is high, prostration is great, the spleen is swollen; there are vomiting and diarrhoea, and in the severe cases are delirium, stupor and coma.

Cases that are fatal usually die between the fifth and eighth day, and those that recover begin to improve upon the sloughing of the ulcer, after which the fever subsides by lysis and strength is slowly regained.

HYDROPHOBIA.

Definition.—An acute febrile disease in which there is a morbid fear of water and a spasm of the muscles of degultition.

Adjustment.—Atlas, C. P. and K. P. There is no localized pathology and no nerve tracing.

Symptoms.—The symptoms are divided into three stages, the initial stage, stage of excitement and stage of paralysis.

The initial stage begins with headache, mental depression, malaise, anorexia, insomnia, slight fever and difficulty in swallowing, after which there is the gradual merging into the second or excitable stage. During this second stage the patient is restless and excitable, and the symptoms are increased upon noises and the sight of water. The skin is sensitive, and there is hypersensitiveness of the special senses. The throat stiffens, and there are paroxysms of esophageal spasm of great severity, which is increased upon the sight or suggestion of water. With these paroxysms the breathing is difficult from the contracted respiratory muscles, and cyanosis results; there is delirium and maniacal excitement, but during certain intervals these cerebral symptoms may entirely subside, and in three or four days the patient passes into the paralytic stage or begins to recover.

In the paralytic stage the patient passes into a state of coma, with general muscular relaxation, and death occurs in a few hours or days.

Hydrophobia usually follows the bite of a rabid dog, wolf, fox, cat or cow, at which time poisonous toxines may be inoculated into the human economy, and because of poor elimination, due to vertebral subluxations at K. P., this poison has an injurious effect upon the body at large, as is manifested by the symptoms.

Lyssophobia is a form of pseudo-hydrophobia found in hysterical patients who may have been bitten by a dog, but in which hydrophobia does not develop. It is a morbid fear of becoming rabid.

GONORRHEAL RHEUMATISM.

Definition.—A form of monarticular arthritis accompanying or following gonorrhea.

Adjustment.—K. P. and lower lumbar.

Pathology.—Gonorrhea is a catarrhal or exudative inflammation of the mucous membrane lining the urethra. In the early stages the mucous membrane becomes swollen and congested, and there is a profuse exudation of an abnormal or transformed mucus from the membrane. Later this mucus may become purulent and the mucous membrane become destroyed. In such a case, should the inflammation subside, the healing of the destroyed membrane may produce stricture. Gonorrheal rheumatism or arthritis only occurs in those cases having the proper lumbar subluxation, which renders the articulation affected weak and unable to resist the effect of poisons which are absorbed from the inflammatory area of the urethra. This usually affects one of the larger joints, and usually the right knee joint. It becomes swollen, red and edematous. The swelling and tenderness is so great that movement is painful, hence suppressed. If the inflammation is prolonged the synovial fluid becomes dried up, the synovial membrane becomes thickened, the periarticular cartilage is destroyed, the bone is deformed and the joint becomes stiff.

Symptoms.—Gonorrhea begins with a burning pain in the urethra, which is increased upon urination, and accompanied by a mucous or muco-purulent discharge. The dangerous practice of washing out the urethra with a syringe is frequently employed by those who know no better. This washes the pus up into the urinary bladder and prostate gland, the result being cystitis and gonorrheal prostatitis, in which the gland becomes chronically enlarged, constricting the prostatic portion of the urethra and pressing upon the rectum, from which much pain arises.

The gonorrheal rheumatism or arthritis begins with severe aching pain in the joints, usually the right knee, ac-

companied by swelling, redness and marked tenderness. The swelling is edematous and the synovial pouches are distended with their secretion. The knee is made stiff to decrease the pain, which is so severe that the individual may be unable to walk. There may be slight fever present, with general febrile symptoms. Occasionally the effused serum around the joint undergoes suppuration, producing empyema of the joint. Very rarely the joint becomes permanently ankylosed through the false exostoses that form from the epiphyses.

This monarticular arthritis occurs because of the absorption of poisons from the gonorrheal inflammation in the urethra, which become localized in the weakened knee joint. The knee joint is made weak by a local subluxation in the lower lumbar region. The correcting of the local subluxation in the lumbar region permits the normal flow of mental impulses to the tissues affected by the arthritis, whereby heat is restored to normal, the swelling and hyperemia disappear, and all pain and incoordination subside. The adjustment at K. P. increases the activity of the kidneys, so that all impurities in the body will be properly eliminated and cannot become localized elsewhere.

Many cases are on record that have recovered from acute gonorrhea in from one to ten adjustments, they being given every day or every other day. Cases of gonorrheal rheumatism usually require a longer time, but several cases have recovered in less than one month's adjusting.

In cases where the mucous membrane is destroyed by the inflammation and a stricture forms because of the scar forming, results can be obtained through adjustments. A case of five years standing completely recovered from the stricture after two and one-half months' adjustments.

SYPHILIS.

Definition.—A chronic incoördination of slow progress, characterized by an initial lesion, the chancre, and in the advanced stages resulting in a serous poisoning.

Adjustment.—K. P., P. P. and local, according to the zone in which the effect becomes localized.

Pathology.—The first abnormal structure to appear is the indurated chancre, which forms at the point where poison has been inoculated into the body. The tissue around the chancre becomes swollen and hard, and more or less inflamed. The surrounding lymphatics become enlarged, and later the skin becomes covered with various forms of eruptions, the most common of which is the syphilide, syphilitic acne, and the mucous patches on the mucous membranes of the mouth. Syphilitic periostitis often occurs early, and is characterized by the formation of bony nodes or exostoses appearing upon the shaft of the long bones, especially the tibia and clavicle.

In the tertiary stage the syphilis may become localized in an organ or several organs and produce marked and various structural changes in the organs affected so that their normal function is lost. When located in the liver, spleen or other gland there is a marked increase in the amount of connective tissue of the organ, the capsule becomes thickened and the syphilitic gumma usually develops. This gumma has about the same pathologic consistency as the tubercle. In the center there is an accumulation of closely-packed sunken cells, fat granules, cholesterin and a little fibrillated tissue. Surrounding this center there is a layer of epitheloid cells situated in the meshes of connective tissue fibres, and upon the outside, forming the third layer, there is an accumulation of leucocytes, with a few epitheloid and giant cells, all of which are surrounded by connective tissue.

In older gumma the substance is arranged into but two layers, an inner or soft layer and an outer or fibrous layer, which is dense and hard. Many of these small growths may coalesce to form a large nodular mass, which frequently softens and undergoes suppuration, with the formation of a yellowish pus.

In the late stages of the disease the poisonous effects may become localized in bone, producing syphilitic necrosis, in which large holes are formed in the bone. The same process of destruction may be localized in the skin and subcutaneous tissue, with the formation of large sloughing sores. The sore will appear to heal when a scab forms and the skin contracts, but upon washing the scab is softened and sloughs off uncovering an accumulation of thick pus. When the sore does heal the scar remaining is similar to that of a burn. In the late stages the finger nails also become destroyed by onychia and are ragged, producing considerable discomfort to the patient.

In the tertiary stage the process of destruction may become localized in any tissue of the body, including the brain, spinal cord, intestines, liver, lungs, joints and bones.

Symptoms.—The symptoms can be divided into three stages, viz.: Primary, secondary, and tertiary. The initial or primary stage is characterized by the formation of a hard chancre occurring at the point of inoculation. This is usually upon the prepuce of the male or the vulva of the female. At the onset this chancre looks like a papule situated upon an elevated base, which is hard and indurated. The papule becomes eroded and forms an ulcer. The glands in the region of the ulcer become painlessly enlarged and hard, but decrease in size upon the healing of the ulcer, to again enlarge during the secondary stage.

Two or three months after the disappearance of the symptoms of the initial stage the symptoms of the secondary stage are manifest.

The secondary symptoms begin with constitutional disturbances consisting of a slight fever of 102 degrees or less, which runs an irregular course, and is accompanied by headache, backache, sore throat, general weakness, and a painless enlargement of the lymphatic glands of various parts of the body. Those of the groin enlarge first, and later the cervical, axillary, popliteal and other groups. The

enlarged and hard glands remain separate, do not coalesce rapidly, and are not tender, all of which tends to differentiate them from tubercular glands. Then the skin becomes the seat of an eruption known as the syphilide, and consisting of small red spots, more noticeable after bathing with hot water. Later these spots become brown or coppery colored and may finally disappear, but sometimes remain permanent. In other cases the skin becomes covered with a papular eruption known as the syphilitic acne, which is most densely distributed over the face, neck and back. This eruption may last a variable length of time, and, upon healing, leave small pits or scars, which may have a brownish tint or color. The hair falls out in patches and the skin is dry, rough and intensely itchy. The nails become destroyed by syphilitic onychia, and frequently drop off or have ragged edges and bleed easily. Bony nodules form upon the shaft of the long bones, due to a syphilitic periostitis. The node is composed of an exostosis and is most frequently found upon the anterior surface of the tibia and upon the clavicle. A scaly copper-colored syphilide nearly always appears upon the palms of the hands and the soles of the feet, and shreds or scales of skin can be peeled off from it. Anemia develops from the presence of syphilitic toxines in the blood and serum, and is marked by a yellowish or greenish-brown tint of the skin, known as syphilitic cachexia. The digestion is poor, insomnia is present, and the patient undergoes great mental anxiety because of having contracted the dreaded disease.

The tertiary stage may not appear for many years after the disappearance of all secondary symptoms, the time varying from six months to twenty years. This is manifested when the amount of poison accumulated in the human system is very excessive, and because of local subluxations diminishing the resistance of local organs will become localized in these weak organs. If the intestines are affected there will be the passage of shreds of destroyed membrane, with pus from the destruction of the mucous membrane.

If the liver or kidneys are affected the result is amyloid degeneration of these organs, and when the brain is affected the result is dementia paralytica or general paresis of the insane. The spinal cord is frequently affected by the formation of gumma, and it is the gummatous formation in organs that produces the tertiary symptoms. This is most frequently located in the posterior part of the cord, thus producing pressure upon the sensory tracts, and may bring about a degeneration of these columns, the result being locomotor ataxia.

The terminal stage of most cases is marked by necrosis of various organs. From the ulceration of the larynx there may be parts of the laryngeal cartilages coughed up; the mucous membranes of the nose may be the seat of syphilitic rhinitis, giving off an intensely offensive odor (ozena), the bridge of the nose will become sunken and the septum entirely destroyed. The necrosis of bone is localized, often affecting the face, in which case deep holes are eaten in the cranial and face bones. Sight is very often destroyed, either by optic atrophy, which occurs in a large per cent of cases, or by necrotic destruction of the eyeball. The patient becomes crippled, both physically and mentally, before death overtakes him, and he may remain in this state of deformity, blindness and decay for years before death.

Owing to the long duration and irregular course of syphilis and the newness of Chiropractic, reliable statistics of the results obtained cannot be given, but in many cases of the primary and secondary stages that have been adjusted the symptoms have disappeared, usually rapidly, and as yet no sign of the following stage or stages have appeared. There is no more loathsome disease than syphilis, and every precaution should be exercised to avoid it, and it can be absolutely avoided.

Gonorrhea being a catarrhal inflammation of the urethra and entirely different from syphilis, is readily overcome by adjustments in any stage. Many cases are on record, vary-

ing from one week to five years standing, that have entirely recovered under pure unadulterated Chiropractic adjustments. The time required for either an acute or chronic case is variable, many acute cases having disappeared after a single adjustment, and most of them in less than two weeks time. A chronic case of five years standing, in which had developed a urethral stricture, making it necessary to use a sound in order to draw the urine, entirely recovered after receiving two and one-half months adjustments. Although it may sound almost impossible, the stricture was entirely removed and urination was normal thereafter.

Gonorrhea, like syphilis, can and should be avoided. Its effects are not alone limited to the urethra, as many suspect. In many cases a syringe is used to wash the urethra, and this washes the pus and exudate up into the prostate gland and urinary bladder, thus the use of the syringe should always be discouraged.

If the prostate gland becomes affected it enlarges and compresses the prostatic portion of the urethra, causing difficult urination and severe pain to the patient. Gonorrheal cystitis results when the pus is washed into the bladder, and produces even more distress than the gonorrhea itself.

SECTION IV.

DISEASES OF THE DIGESTIVE SYSTEM.

STOMATITIS.

Definition.—Stomatitis is an inflammation or excessive heat in the mucous membrane lining the mouth. There are five forms of stomatitis, viz.: Simple, ulcerative, follicular, thrush and gangrenous.

Simple Stomatitis, as its name implies, is a simple excessive heat affecting the mucous membranes lining the mouth.

Adjustment.—This form is produced by a subluxation at S. P. in combination with the middle cervical region, which impinges the nerves having to do with the transmission of the calorific function and produces perverted expression of this function, the result being termed inflammation or excessive heat. To restore the mucous membrane to normal it will be necessary to adjust the subluxations causing the trouble, viz., M. C. P. and S. P.

Pathology.—The excessive heat in the mucous membrane results in hyperemia and swelling of the part, with a slight exudation of a transformed mucus, serum and fibrin. These conditions are usually determined upon inspection of the mucous membrane of the mouth.

Symptoms.—The disease begins with redness, swelling and dryness of the mucous membrane of the mouth, and enlargement and dryness of the tongue, but may be limited to the membrane lining the cheeks and gums. The tongue is heavily coated and fissured, and has an offensive odor. There may be a slight fever, with the usual gastric disturbances. Because of the inflammation of the gums and

tongue, mastication and swallowing are very difficult, and are accomplished with considerable pain.

Under adjustment the excessive heat is restored to normal when the pressure upon the calorific nerves is removed, and all symptoms subside.

APHTHOUS OR FOLLICULAR STOMATITIS.

Definition.—A form of stomatitis, characterized by the appearance of small white spots two to four mm. in diameter from the follicles of the mucous membrane.

Adjustment.—M. C. P., S. P. and K. P.

Pathology.—The mucous membrane becomes swollen, red, congested, and issues a white exudate from the follicles, at which place there was previously located a small vesicle with a red areola. After the vesicle breaks a small round ulcer is left, and it is from this ulcer that the exudate comes.

Symptoms.—The patient first experiences discomfort when the mucous membrane is covered by the small vesicles, which appear upon the inner surface of the lips, cheeks or tongue. After the vesicle breaks a small superficial ulcer remains, giving off the exudate, which is white in color. The bodily temperature may reach 100 or 101 degrees, the tongue may be coated, the breath have a fetid odor, and the patient's appetite be poor.

After a week's duration the ulcers finally heal and the symptoms disappear, but in some cases complications may occur which may protract the case beyond this normal limit of time.

ULCERATIVE STOMATITIS.

Definition.—A form of stomatitis marked by the presence of small linear ulcers, usually unilaterally, situated upon the mucous membrane of the gums, lips or cheeks.

Adjustments.—M. C. P., S. P. and K. P.

Pathology.—The gums are swollen, red and spongy, because of the excessive heat and hyperemia. The gums bleed easily, and upon them form small linear ulcers, few in number and located upon one side of the mouth only. These ulcers are soft and slough off portions of the mucous membrane. The surrounding lymphatic glands may become enlarged.

Symptoms.—Upon observation it will be seen that the mucous membranes of the mouth are swollen and red, and that the gums are spongy, bleeding easily. Upon the mucous membrane may be seen one or more long, narrow ulcers having deep, sloughing bases and give off putrified material. The lymphatics draining the affected part may become enlarged, and also the lower salivary glands. The breath has a foul or fetid odor, the appetite is poor, mastication may be difficult, and gastric disturbances are usually present.

It is not uncommon for the teeth to become loose because of necrosis of the alveolar processes. Occasionally no symptoms, except the appearance of the ulcers, occur. This condition is usually recognized upon inspection of the mucous membranes of the mouth and does not need differentiation from other forms of stomatitis, as there are no other forms which closely simulate it.

THRUSH.

Definition.—A form of stomatitis, characterized by the presence of minute multiple white spots, which are situated closely together, and rapidly coalesce.

Adjustment.—M. C. P., S. P. and K. P.

Pathology.—There is inflammation of the mucous membrane of the tongue and mouth, with swelling and hyperemia. The exudation occurs first from the membrane of the tongue, afterwards spreading to the lips, cheeks, palate and pharynx, in the form of small white curd-like spots, which soon coalesce, and can readily be removed without leaving a bleeding surface.

Symptoms.—This form of stomatitis is the most common, and is most usually found in bottle-fed children. The first indications are the appearance of the small white curd-like spots on the tongue, which soon spread to the other mucous membranes of the mouth and throat. These spots soon coalesce, but can be removed without leaving a bleeding surface. The child may be restless and refuse to nurse because of the soreness of the mouth, and, as a result, will become emaciated, pale and weak.

The main differentiation is from follicular stomatitis, and is briefly this: In thrush the spots are small, soon coalesce, and can be removed without leaving a bleeding surface, while in the follicular form the spots are larger, less numerous, and when removed leave a bleeding surface.

GANGRENOUS STOMATITIS.

Definition.—A form of stomatitis resulting in necrosis or decay of the mucous membrane and its surrounding tissues.

Adjustment.—M. C. P., S. P. and K. P.

Pathology.—As indicated in the definition, the pathology consists of an inflammation terminating in decay of the inflamed part.

Symptoms.—During the early stage the mucous membrane becomes red and swollen from the hyperemia. Later a dark sloughing ulcer forms upon the mucous membrane lining the cheek. This ulcer spreads rapidly, soon covering a large area. The skin externally is smooth and glossy, the breath has an extremely offensive odor, fever of 103 or 104 degrees is present, the appetite is poor, nausea and vomiting may be present, the pulse is rapid and weak, the respiration is rapid and shallow, and with the appearance of the dark gangrenous spot the fever becomes irregular, with great prostration. The muscles of the cheek may be perforated by the necrosis, after which it may extend, affecting

the gums, jaw bones, and the face in general. Particles of destroyed bone may slough off with pus, destroyed membrane and epithelium. The toxic symptoms soon predominate, with delirium, stupor and coma, with a fatal termination at the end of the first or during the second week.

GLOSSITIS.

Definition.—An inflammation or excessive heat of the tongue.

Adjustment.—In the great majority of cases a specific adjustment at S. P. will eradicate all symptoms of glossitis, but in a few cases it may be necessary to adjust M. C. P. and K. P.

Pathology.—The pathology is that of a simple inflammation consisting of excessive heat, which produces swelling, redness and hyperemia. The swollen mucous membrane gives off a thick, sticky exudate consisting of transformed mucus. The swelling is the result of infiltration of serum, which occurs through a process of osmosis, and is not due to hypertrophy.

Symptoms.—The first noticeable symptom is the swelling of the tongue, with marked tenderness, making chewing, speaking and swallowing very painful. Therefore these acts are suppressed as much as possible. The swelling of the tongue, which is also very red, is so great that it is retained within the mouth with great difficulty, and may protrude beyond the lips. The tongue is usually dry and fissured, yet there may be excess secretion of saliva. As a result of the enlargement there may be obstructive dyspnoea, dysphagia and indistinct speech. Fever may be present or absent, the cervical glands are usually swollen, and the tongue may suppurate with pus formation, but, as a rule, the duration is about one week, after which recovery occurs. However, the inflammation may become chronic, in which case the tongue remains permanently enlarged because of

the overgrowth of connective tissue. The sense of taste may be dulled or entirely lost, and the tongue is constantly coated.

The adjustment at S. P. relieves the pressure upon the calorific nerves leading to the tongue, permitting the normal transmission of calorific impulses to the tongue, whereby the heat is restored to normal and all symptoms subside.

ECZEMA OR PSORIASIS OF THE TONGUE.

Definition.—A cutaneous affection characterized by patches of rough scales, occurring in many forms, and sometimes affecting the mucous membrane of the tongue.

Adjustment.—S. P. and K. P. All mucous membranes have an excretory function, and when the kidneys fail to properly eliminate the various metabolistic poisons from the body, the mucous membranes and skin attempt to do so, in which event it often manifests itself as a skin eruption, and is capable of taking on different forms, one of which is eczema. Eczema can be eradicated from any part of the body by the adjustment of vertebrae, which will increase the excretory power of the body.

Symptoms.—It will be first noticed there is a hard spot upon the dorsum of the tongue, and in time this hard spot develops to a small scaly area, which progressively spreads from the center. There may be several patches, and when disquamation begins in the center of each patch and they spread around the edges, it gives to the tongue a peculiar appearance, known as the geographical tongue. The patches coalesce, and burn and itch around the edges.

LEUCOPLAKIA BUCCALIS.

Definition.—A chronic affection of the tongue and cheeks, characterized by the appearance of smooth, white, painless patches upon their mucous membranes.

Adjustment.—S. P. and M. C. P.

Symptoms.—A small white spot may appear without the patient's knowledge until he should see it, for it is devoid of any subjective sensation. Later the spot enlarges and becomes hard, being composed of an accumulation of endothelial cells. Ordinarily the condition does not become serious, but occasionally an epithelioma develops upon the site of the hard spot. When such is the case the symptoms developing are those of carcinoma.

XEROSTOMA

Definition.—An affection of the buccal and salivary glands in which the secretion of saliva ceases.

Adjustment.—Fourth cervical and S. P.

Symptoms.—This most frequently occurs in some disease of the salivary glands in which their secretion is suppressed, making the mucous membranes of the mouth dry. The membranes lining the buccal cavities and covering the tongue and palate become covered or glazed over with a heavy, sticky coating of abnormal mucus. This makes speaking, chewing and swallowing very difficult, as the tongue readily sticks to the roof of the mouth. The tongue may be fissured and cracked.

HYPEREMIA OF THE PHARYNX.

Definition.—An incoordination in which there is an abnormal fullness of the capillaries in the mucous membrane of the pharynx.

Adjustment.—S. P. in combination with lower cervical.

Pathology.—The local vertebral subluxation causes pressure upon the motor nerves leading to the muscular fibres forming the vessel walls, which permits them to lose their normal muscular tonicity, thereby permitting them to relax, stretch or dilate so that the blood is not properly forced through them, hence its accumulation or congestion. This is not always an incoordination itself, but is frequently a part of the pathology of many other diseases.

Symptoms.—Upon inspection of the mouth or throat it is found to be swollen and of a red color, due to the presence of an over-supply of blood in the capillaries. The larger veins may be distended and the adjacent structures swollen. Swallowing is difficult, and breathing may be interfered with to such an extent that dyspnoea is present. This is most commonly a symptom of nasal catarrh or pharyngitis.

ACUTE PHARYNGITIS.

Definition.—An acute inflammation or excessive heat of the mucous membrane lining the pharynx.

Adjustment.—Lower cervical in combination with S. P.

Pathology.—The local subluxation impinges the calorific nerves leading to the mucous membrane of the throat; this causes inflammation or excessive heat. The excessive heat produces muscular relaxation, which permits hyperemia of the vessels. There is an exudate from the congested vessels into the surrounding tissues, making them edematous and swollen. From the mucous follicles there is an exudation upon the external surface of the pharyngeal wall.

Nerve Tracing.—Tenderness is readily traceable from the lower cervical region, around the neck to the region of the throat, where tenderness is general.

Symptoms.—Acute pharyngitis is a very common affection, and is usually called sort throat, a cold in the throat, or catarrh of the throat. This begins with a sensation of dryness and soreness of the throat, dysphagia, slight chilliness, and fever. The fever may not exceed 101 or 102 degrees. There is a constant desire to clear the throat. The neck may become stiff and the cervical lymphatic glands become enlarged and hard. The mucous membrane is red and congested, as can be seen upon inspection, and the swelling interferes with swallowing and breathing. The inflammation may extend upward into the eustachian tubes, swelling its lining membrane so that hearing is affected,

and there may be ringing noises in the head. The nasal catarrh may be increased in severity and the exudate drop into the pharynx during sleep, so that in the morning the patient coughs and expectorates much mucus.

When the inflammation becomes chronic it is called *Clergyman's sore throat,* and is accompanied by a chronic cough, constant clearing of the throat and hoarseness.

RETRO-PHARYNGEAL ABSCESS.

Definition.—As indicated by its name, it is an accumulation of pus within a pyogenic membrane, in the posterior wall of the pharynx.

Adjustment.—Lower cervical, S. P. and K. P.

Pathology.—This begins with a circumscribed area of inflammation in which the blood vessels are congested, and there is swelling, due to the infiltration of serum into the surrounding tissues. The effused serum and inflamed structures undergo suppuration or pus formation, the newly formed pus collecting in a cavity, which is soon surrounded by a membrane called the pyogenic membrane. This sac of pus may protrude anteriorly into the pharynx, where it can be observed to be of a reddish color at first, but later, when filled with pus, becomes white or yellow. Finally the abscess may burst into the pharynx, from whence the pus is expectorated.

Nerve Tracing.—The course of tenderness is very similar to that of acute pharyngitis, but is more localized over the region of the abscess.

Symptoms.—The onset is with sore throat and difficult swallowing. The throat is red, swollen and tender, and if the swelling is great breathing may be interfered with so that dyspnoea is present. There is cough and hoarseness, the neck may become stiff, the cervical glands enlarge, fever of an irregular course be present, and upon inspection the abscess can be seen. It will be noticeable that the pro-

truding abscess will fluctuate under pressure. From the mucous membrane covering the abscess externally there oozes a sticky, thick exudate in large quantities, making it difficult for the patient to expectorate same and impossible to swallow. There may also be a throbbing pain in the throat, which suddenly stops when the abscess breaks.

FOLLICULAR TONSILITIS.

Definition.—An inflammation or excessive heat in the tonsils, with a slight amount of suppuration occurring within their follicles.

Etiology.—Subluxation at lower cervical and S. P., but K. P. should also be included in the adjustment, as metabolistic poisons are being formed, and can better be eliminated when the kidneys are working at par.

Pathology.—The tonsils become swollen and sore from the excessive heat. The vessels are hyperemic, and a vascular exudation occurs into the surrounding tissues, so that the entire throat is greatly swollen. Suppuration of a slight degree occurs within the follicles of the tonsils and gives off a yellowish exudate, which collects upon the inflamed tonsil, forming a patch. At first this exudate appears as small spots, but they soon coalesce, forming patches which may cover the entire tonsil.

Nerve Tracing.—Tenderness is traceable from the lower cervical foramen, outward over the skin of the neck to the region over the tonsil, in front of and below the angle of the jaw. Also tenderness is sometimes found from the 13th or 14th intervertebral foramen on the right side, passing outward under the scapula and axilla, and then upward over the breast, beneath the clavicle and along the neck to the region of the tonsil.

Symptoms.—The onset is sudden, with chilliness and a rapid rise in the bodily temperature, often reaching as high as 105 degrees, but is more often about 102 degrees. There are intense headache and backache, and more or less

general aching. The appetite is soon lost, and vomiting of a persistent character may be present. The throat is sore, red and swollen, so that swallowing is painful and avoided as much as possible by the patient. The urine is scanty and highly colored, the bowels are costive, the tongue is coated, the breath has a foul odor, and the voice is nasal in character.

Upon the second or third day small white or yellowish spots will be seen oozing from the follicles. These spots soon coalesce to form a large patch, which covers the entire tonsil. This exudate has a very offensive odor, but is finally sloughed off with the expectoration. The fever falls by crisis between the third and eighth day, with profuse sweating and rapid recovery. During the attack the patient may have lost much weight, but this is gained at a very rapid rate. During the fever the pulse and respirations were rapid, but with the fall of the fever they both become more slow and approximate the normal.

SUPPURATIVE TONSILITIS OR QUINSY.

Definition.—A form of tonsilitis in which there is a marked degree of suppuration, the entire tonsil being transformed into an abscess.

Adjustment.—Lower cervical, S. P. and K. P.

Pathology.—The tonsil, usually only one, becomes congested and swollen because of the excessive heat. The swelling may extend far back, affecting the naso-pharynx, eustachian tube and fauces. The substance of the organ undergoes suppuration near to its center, so that the covering of the tonsil forms the covering for the abscess into which it is transformed. The abscess usually breaks about the sixth to ninth day, after which the swelling subsides.

Nerve Tracing.—The same as that for follicular tonsilitis.

Symptoms.—The onset is marked by general malaise, sore throat, headache, backache, aching in the extremities,

and general indisposition. The appetite is poor, the mind is dull, and the individual is not alert as usual. After prodromal symptoms of one or two days the throat becomes swollen and very red. The affection, however, is unilateral, so that the swelling is confined to one tonsil. The affected tonsil may extend beyond the median line of the throat, and is so tender that swallowing is impossible. The pressure of the abscess against the eustachian tube will affect the hearing, and possibly produce earache. There is a thick, sticky exudate that oozes from the inflamed tonsil, and which is removed with great difficulty and much pain to the patient, but affords great relief for a short time after its removal. There is a throbbing pain, occurring with each pulse beat. The uvula and soft palate may be involved in the swelling, thus affecting the voice. The cervical glands are often swollen, and the neck is stiff. The fever, which appears early, varies from 101 to 105 degrees, and is of an irregular course. The patient usually does not eat for several days preceding the bursting of the abscess, because of the intense pain produced upon doing so. Between the sixth and eighth days the abscess breaks anteriorly into the mouth, after which the pain subsides and recovery is rapid.

Under Chiropractic adjustments this may never reach the abscess stage, because of absorption and elimination through other channels, and if an abscess does form it will break at an earlier period when under the adjustments. Under adjustments the fever is always slight, and may be entirely absent.

CHRONIC TONSILITIS.

Chronic tonsilitis is a prolongation or continuation of the acute forms. Recurrent tonsilitis is a condition in which there are many recurring acute attacks, and has the same symptoms as the acute form previously described.

Pathology.—Chronic tonsilitis is commonly associated with chronic pharyngitis, and when the glandular structure

is subjected to excessive heat for a long period of time there is a proliferation of the connective tissue corpuscles and a hyperplasia of the interstitial connective tissue of the organ, making it chronically and permanently enlarged. The only symptoms that may arise are mouth breathing, because of obstruction of the naso-pharynx, and a nasal tone to the voice.

ADENOIDS.

Definition.—An overgrowth of adenoid or lymphoid tissue, usually in the naso-pharynx.

Adjustment.—Local in the cervical, depending upon the location of the growth, in combination with K. P.

Pathology.—In this incoordination there is an abnormal and over-development of the lymphoid tissue in the part affected, so that one or more small lymphoid tumors are formed. These growths deprive the surrounding tissues of their nutrition, have an abnormal relation to the tissues adjacent, and are incapable of performing the function of the gland they imitate.

Symptoms.—The first symptom to attract the attention of the observer is that the child breathes through the mouth when sleeping, and later during waking hours. The nostrils are small, and dilate with inspiration, the bridge of the nose is very broad, and the lower jaw protrudes so that the lower teeth may extend in front of the upper teeth. Breathing becomes difficult, the sense of taste and smell are impaired, there is a hawking cough accompanied by a scanty expectoration, and hearing may be affected. The deafness is the result of pressure by the adenoid upon the eustachian tube, which prevents the normal passage of air into the middle ear. The child is often mentally dull and unable to concentrate, but this is because he is unable to hear; the eyes may be affected by the M. C. P. subluxation, and these two gateways of knowledge being shut off, the child has but the senses of taste, smell and touch through which to

gain knowledge. Since smell and taste are impaired, the only normal sense is that of touch, and an individual depending entirely upon this one sense for impressions which, when interpreted, result in knowledge, would naturally be dull mentally, and forget easily because of improper comprehension.

ACUTE ESOPHAGITIS.

Definition.—Is an acute inflammation or excessive heat in the mucous membrane lining the esophagus.

Adjustment.—Since this is caused by pressure upon a calorific nerve by a subluxation at S. P., the adjustment would be specifically given at S. P.

Pathology.—The mucous membrane becomes red from the hyperemia, and swollen from the exudation of serum which becomes infiltrated into the surrounding tissues. There is catarrhal exudate of abnormal mucus from the free surface of the lining membrane.

There is no specific nerve tracing in esophagitis, as the esophagus lies behind the sternum and trachea, and since it is frequently associated with gastritis, tenderness may be traceable from S. P. to the region over the stomach.

Symptoms.—These begin with dryness and extreme thirst, followed by deep-seated substernal pain. There is extreme dysphagia upon swallowing, and soreness of the throat. Upon inspection of the throat it will be seen that the pharynx is inflamed and red. There is tenderness over the region of the stomach and around the throat, and if the esophagitis is associated with gastritis, there is the presence of gastric disturbance.

CANCER OF THE ESOPHAGUS.

Definition.—An accumulation or growth of epithelial cells upon the mucous membrane of the esophagus, in which there is progressive inflammatory destruction and colloid degeneration.

Adjustment.—S. P. and K. P.

Pathology.—This is most commonly carcinoma, and is composed of epithelial cells, therefore is derived from the hypoblast or epiblast. The cells are of all shapes and are situated upon a fibrous stroma which sends out projections in all directions, upon which are built the epithelial cells. The blood vessels and lymphatics are found only in this stroma, and communicate with the cancer cells through the stroma only. The growth of the tumor occurs from the base, so that the apex of the growth is composed of the oldest cells. It is in these first-formed cells that degeneration takes place, they undergoing a form of decay. The most common form of degeneration found in cancer is colloid degeneration, but other forms, such as mucoid, fatty or pigmentation may occur.

Symptoms.—While the growth is small and contains no decay the only symptoms present are pressure symptoms. The first to become noticed is dysphagia, due to partial obstruction of the esophagus, so that the food cannot easily pass into the stomach.

The dysphagia is progressive in character, and is accompanied by pain as soon as the degeneration begins. This pain is of a dull, burning, gnawing or itching character. The breath has a foul odor, the tongue may be coated, the body undergoes progressive emaciation, the cervical glands may become enlarged, and the food may regurgitate into the pharynx. The cancerous cachexia soon develops, hemorrhages may occur from the growth because of the erosion of blood vessels, and finally the growth may become so large that complete stenosis is produced. On account of the inability to swallow, the patient becomes greatly emaciated and weak, and finally dies.

There may be a partial obstruction or stricture from other pathological conditions, such as the cicatrix of a healed ulcer, a benign tumor, pressure upon the esophagus by a tumor of the mediastinum, or tumor of the lung, all of

which will present the pressure symptoms named above, but the characteristic pain, cachexia, emaciation and debility, and lymphatic enlargements will serve to distinguish cancer from them. Dilatation or diverticula of the esophagus frequently accompanies obstruction by cancer or obstruction by other causes.

DILATATION OF THE ESOPHAGUS.

Definition.—A stretching of the muscular walls of the esophagus, either localized or general, so that the food is retained and regurgitated at irregular intervals.

Adjustment.—S. P.

Pathology.—Below the point of the dilatation there may be a partial obstruction, but this is not a necessity to dilatation. The S. P. subluxation impinges the motor nerves leading to the muscular fibres of the esophageal wall and causes a lack of muscular tonicity and elasticity, so that when food is being forced down into the stomach and presses upon the esophageal wall it tends to stretch these muscle fibres. The condition being prolonged for many months, and the stretching continuing slightly each day during this time, it will soon develop that a saccular dilatation has formed in the wall of the esophagus. Such a saccular dilatation is known as a diverticulum, and most commonly forms at the upper end of the esophagus, where it joins with the pharynx.

Symptoms.—This condition is often found in fast eaters, and may be adaptative to stricture or stenosis. When the relaxation of the muscular fibres in the esophageal wall is so great that a sac is formed; the patient realizes that a part of the food being swallowed lodges on the way down. This sac may be formed at any point in the esophagus, but, as previously stated, is most commonly at the junction of the esophagus with the pharynx. When the food accumulates in a sac at this point a visible or palpable tumor forms above the clavicle, and when pressed upon, the food that has collected here is forced into the pharynx. When located

lower there is regurgitation of food at irregular intervals, the quantity varying with the size of sac. The regurgitated material is in a state of fermentation and is covered with froth. X-ray pictures after eating apple sauce containing bismuth will show the outline of the diverticulum.

ACUTE CATARRHAL GASTRITIS.

Definition.—Is an acute inflammation or excessive heat in the mucous membrane lining the stomach, and is accompanied by an exudation from its surface, disturbances in the secretion of the gastric juice, and disordered digestion.

Adjustment.—This is caused by an S. P. subluxation, which impinges the calorific nerves leading to the mucous membrane lining the stomach, and results in perverted expression of this calorific function, known as inflammation or excessive heat. The adjustment may also include K. P.

Pathology.—The inflammation or excessive heat brings about a relaxation of the muscular fibres forming the vessel walls, so that their lumen is increased in size and the blood accumulates in excess quantity, giving rise to hyperemia or congestion. This gives to the mucous membrane a red appearance. From the hyperemic vessels there is a slow vascular exudation of serum which becomes infiltrated into the surrounding sub-mucous areolar tissue, producing a swelling of the stomach wall. The mucous membrane gives off a slimy, abnormal mucus of a catarrhal nature, which is more or less adherent to the mucous membrane, and removed during the act of vomiting.

Nerve Tracing.—Tenderness is traceable from the 13th or 14th intervertebral foramen on either side and radiates along the course of the intercostal nerves, becoming diffuse over the epigastric region.

Symptoms.—This begins suddenly, usually after eating a hearty meal, with severe headache, epigastric distress, and a feeling of fullness and discomfort. Pain may be severe,

but is usually dull and aching. The abdomen becomes distended from the gas formed in the stomach, but later this gas is belched up. There are nausea and vomiting—the vomitus consisting of undigested food, mucus exudate, and finally bile. The tongue is furred and the breath has an offensive odor, the secretion of saliva is increased, and there is often a slight fever of 102 to 103 degrees; with scanty, high-colored urine, costiveness, and some cerebral symptoms, such as delirium, stupor, and possibly coma. Chemical analysis of the contents show that the gastric juice is of an abnormal quality, as the H Cl is diminished and there is the presence of lactic and acetic acid. Convulsions may occur in children, but are rare in adults, while the cerebral symptoms are not common in children. Severe purging may also occur, but is not a constant symptom.

The adjustment of the subluxation at S. P. will relieve the pressure upon the calorific nerve and restore the normal transmission and expression of calorific impulses in the mucous membrane lining the stomach, thereby restoring normal function of the organ and the disappearance of all symptoms indicating incoordination.

PHLEGMONOUS OR SUPPURATIVE GASTRITIS.

Definition.—A severe form of gastritis in which there is a marked degree of suppuration of the mucous and submucous coats of the stomach.

Adjustment.—S. P. and K. P.

Pathology.—The pathological changes occurring in this form of gastritis are about the same as those of acute catarrhal gastritis, except that after the onset suppuration occurs, which forms pus. The pus thus formed either collects, forming an abscess, or is absorbed, giving rise to irregular fever, sweats and chills.

Symptoms.—A line of tenderness similar to the nerve tracing of the acute form is traceable in this incoordination.

There is a high irregular fever, with recurring chills and sweats. There is great epigastric soreness and pain, with vomiting, meteorism and thirst. The termination is with the symptoms of collapse, and death is the usual result, but the proper adjustment will restore the normal expression of function, hence recovery.

CHRONIC CATARRHAL GASTRITIS.

Definition.—A chronic inflammation of the stomach characterized by disturbed digestion, in which there is increased abnormal mucus formation, changes in the character of the gastric juice, and weakness in the walls of the stomach, so that food is retained within the stomach for an abnormal length of time and undergoes fermentation.

Etiology.—This is caused by an S. P. subluxation, which impinges the nerves leading to the stomach and affecting the expression of the calorific and motor functions, so that the mucous membrane is inflamed and the muscular coats lose their tonicity. Since this is catarrhal inflammation, K. P. should be adjusted to increase the excretory power of the kidney, thus assisting in eliminating products of fermentation that have been absorbed.

Pathology.—During the early stages the pathology is the same as that of the acute form, consisting of hyperemia, swelling, and an abnormal exudation of mucus, but the prolonged inflammation soon produces other structural changes. Among these might first be mentioned the overgrowth of the sub-mucous areola tissue, which increases the thickness and lessens the elasticity of the stomach wall. The secretory cells become enlarged, either from the retention of their secretion or from proliferation of the connective tissue. The muscles become relaxed because of a loss of their tonicity, and become stretched, giving rise to dilatation of the stomach. These various changes may affect the entire organ or may be limited to a part of the mucous membrane, especially that part around the pyloric opening.

Nerve Tracing.—The origin and course of tenderness is the same as in the acute form, and tenderness may be very marked and diffuse over the region of the stomach. In addition to this there may be tenderness over the region of the duodenum, for in many cases there exists a gastro-duodenitis.

Symptoms.—The patient may have had repeated attacks of acute indigestion preceding the development of chronic gastritis. The symptoms are very variable, depending upon the degree of pressure and the extent of incoordination that it produces. There are usually headache, vertigo, insomnia, restlessness, drowsiness and lassitude. The appetite is changeable, but is usually poor, and after eating there is a feeling of epigastric fullness, distress or oppression. Pyrosis or heartburn is common, and may be accompanied by regurgitation of bitter fluid and gas. There is an accumulation of gaseous formation in the stomach and intestines, which causes great discomfort and distention of the abdomen. Tenderness is diffuse over the epigastric region, the tongue is heavily coated and fissured, there is a bad taste in the mouth, the urine is scanty and highly colored, and there is weakness and emaciation. The gastric symptoms consist principally of anorexia, nausea and vomiting. The vomitus consists of partially digested food and gastric juice. It has a fetid odor, as it is in the process of fermentation. Chemical analysis of the gastric juice shows that the H Cl is greatly diminished below the .02%, and that there is the presence of lactic and acetic acids. At times the vomitus may contain small quantities of blood that has lost its color and undergone partial digestion. The pain is of a dull character, but may be severe and gastralgic at times; it is not localized, but may be felt over the entire region of the stomach. The course of the affection is irregular and the duration is long, as compared with ulcer and cancer. In the late stages the entire mucous membrane is destroyed from the effect of the prolonged excessive heat, and the

secretion of the gastric juice may be entirely stopped, as there has been a granular degeneration of the secreting cells.

PEPTIC ULCER.

Definition.—A local, circumscribed destruction of tissue, involving the mucous membrane and usually one or more layers of the wall of the stomach, characterized by epigastric pain and disordered digestion.

Adjustment.—This is caused by a local subluxation at S. P., but K. P. should be included in the adjustment, as various poisons may be absorbed from the ulcerated area.

Pathology.—Ulcer of the stomach is usually single, and most frequently located near the pylorus on the posterior wall of the stomach. It is usually small, being from ¼ to ½ inch in diameter and round in shape. As it approaches the muscular layers of the stomach wall it becomes narrow and tapers down to a point, thus giving the entire ulcer a cone shape, with the base in the mucous membrane and the apex in the muscular layers. As the ulcer progresses in size it effects the erosion of blood vessels that may lie in its path, thus giving rise to profuse hemorrhages, the blood of which is soon vomited. A few cases perforate. The ulcerated tissue may later heal by proliferation of the connective tissue corpuscles, so that connective tissue replaces the destroyed epithelium of the stomach wall.

Nerve Tracing.—Tenderness is very marked over the exact location of the ulcer and may be limited to a very small area. It is traceable to the intervertebral foramen of S. P.

Symptoms.—During the early stages the symptoms resemble those of acute dyspepsia, there being epigastric discomfort and pain after eating, accompanied by gaseous formation and sometimes vomiting. As soon as the ulcer develops there is severe gastralgic pain occurring in paroxysms, and is more severe after eating than when the

stomach is empty. If the ulcer is located on the anterior wall of the stomach the pain is felt in the epigastric region, and may be relieved by lying upon the back, while if the ulcer is located in the posterior wall of the stomach the pain is felt near the level of the tenth dorsal vertebra, and may be relieved by lying upon the face. The pain is usually relieved by vomiting, as the food and the acid secretion of the gastric juice irritate the raw ulcerated tissue. The area of tenderness is often very small and can be covered by the tip of the finger. The vomitus often contains blood. If the hemorrhage from the ulcerated tissue is small the blood lies in the stomach and undergoes partial digestion, so that it loses its oxygen, hence has a dark color, so that when it is vomited it resembles coffee grounds; therefore it gets the name coffee-ground vomit. However, if the hemorrhage is large the blood is vomited at once and is of the bright red color and has a strong acid reaction. This bright red vomit is called hematemesis. Chemical analysis of the gastric juice shows a marked increase in the quantity of H Cl secreted by the gastric glands. This strong acid secretion keeps the surface of the mucous membrane in a constant irritable and raw state. There may be marked emaciation and weakness from the loss of flesh.

If the ulcer should be situated directly in the pylorus and should heal, there may result a cicatrical stenosis, or if a series of ulcers should form near the center of the stomach and heal, the result may be the hour-glass stomach, where it is constricted in the center and dilated at each end.

In case the ulcer should lie in the duodenum there is pain in the right hypogastric region, and the pain is increased in paroxysms two to four hours after eating or when the chyme from the stomach enters the duodenum and presses upon the sore ulcer. The patient becomes emaciated, anemic and generally run down. Ulcer differs from chronic gastritis in that the course is more rapid, the gastric juice is over-acid, there is hematemesis, and the tenderness is localized at one point. In chronic gastritis there is hypo-

Fig. 6.—*Showing enormous sarcoma of the superior maxillary.*

chlorhydria, diffuse tenderness, dull pain, slow course, and no hematemesis.

In cancer the vomitus is of the coffee-ground variety, the pain is dull and gnawing, emaciation and cachexia is marked and rapid, and the tumor may be defined upon abdominal palpation. The gastric juice is lacking in H Cl, while in ulcer the H Cl is in excess, the pain is gastralgic, pain and tenderness is localized, and there is hematemesis.

CANCER OF THE STOMACH.

Definition.—An incoordination in which there is the formation of an epithelial tumor upon the stomach wall, in which there is progressive degeneration, and characterized by pain, disordered function and coffee-ground vomit.

Adjustment.—S. P. and K. P.

Pathology.—The growth is usually a carcinoma, and is differentiated from sarcoma as follows:

CARCINOMA.

Derived from epiblastic and hypoblastic structures; an epithelial tissue growth.

Possesses a fibrous stroma.

Blood vessels run in this stroma.

Lymphatics run in this stroma.

SARCOMA.

Derived from mesoblastic structures; a connective tissue growth.

Has no stroma.

Vessels run in direct contact with the cells.

Has no lymphatics.

The tumorous growth begins in the gland cells of the mucous membrane and accumulates in excessive quantity

until a small tumor is formed. This tumor gradually increases in size and soon undergoes degeneration. The cells first formed are the first to be affected by the decay and they slough off as a purulent discharge. The growth is most frequently located at the pyloric end of the stomach, and it is not infrequent that a growth thus situated produces obstruction of the pylorus, with a resulting dilatation of the stomach. If the growth attains a large size, the added weight may draw the stomach downward and adhesions may occur, in which the mucous membranes are grown together, or in which the stomach may become adherent to other abdominal viscera.

Nerve Tracing.—Tenderness is traceable from the 13th or 14th intervertebral foramen on the right side, outward under the scapula and axilla, following the intercostal spaces to the right hypochondriac region, and becoming diffuse over the region of the cancer.

Symptoms.—So long as the growth is so small that it cannot produce pressure symptoms and there is no suppuration occurring in its tissues, the symptoms are latent. But as soon as it increases in size it will produce pressure symptoms in the region where it occurs, and as soon as there is suppuration the typical symptoms of cancer begin to be apparent. This is first manifested by a feeling of oppression and discomfort in the epigastric or right hypochondriac region, which is increased after eating. There is anorexia, nausea and vomiting, and belching of gas after meals. As a rule, the bowels are constipated and the fecal matter has a fetid odor. A dull, aching, gnawing, itching pain, which is characteristic of cancer, is located in the region of the growth, and may radiate along the course of the nerves to the spine. There is marked tenderness over the epigastric region, which may be so great that it is impossible to palpate the abdomen, but when the abdomen can be palpated a tumor may be felt, especially if it be located in the pylorus or on the anterior wall of the stomach.

The vomiting becomes very marked after eating, and soon takes on a characteristic form peculiar to cancer of the stomach—that is, the coffee-ground vomit. This is produced by the effusion of small quantities of blood from the destroyed vessels into the stomach, which is retained here and undergoes partial digestion, so that the red color is lost from the loss of oxygen. Chemical analysis of the gastric juice shows diminished or absent H Cl and the presence of lactic and acetic acid.

The patient becomes greatly emaciated and of a sallow color, due to the development of the cancerous cachexia. The muscles become thin and weak, the skin assumes a yellowish color, the appetite is completely lost, the pylorus may become completely obstructed, the stomach may dilate, and death soon will occur.

The cardinal symptoms of gastric cancer are, progressive emaciation and loss of appetite, dull gnawing pain localized in the region of the stomach, coffee-ground vomit, in which the H Cl is absent or diminished, a palpable tumor and dilatation of the stomach, with the development of the cancerous cachexia.

For differentiation from ulcer see peptic ulcer in the preceding topic.

Cancer differs from chronic gastritis, in that the duration is comparatively short, death occurring within one to one and one-half years; the tumor is palpable, the vomit is of the coffee-ground variety, the cancerous cachexia soon develops, the pain is dull and gnawing, and is not relieved by eating, as is gastritis.

HYPERTROPHIC STENOSIS OF THE PYLORUS.

Definition.—A condition in which there is a thickening of the muscular coats of the pylorus, causing a stenosis or obstruction of the opening into the intestine.

Adjustment.—Lower S. P. specifically.

Pathology.—The muscular and connective tissue of the pyloric orifice is thickened by hypertrophy of the cells, so that the bulk of tissue is increased and the lumen of the opening is compressed and made smaller. There is no form of degeneration or decay present, this being a simple hypertrophy of the part.

Symptoms.—The pyloric opening being obstructed, the food is unable to pass from the stomach into the intestines. This gives rise to a feeling of epigastric fullness and discomfort, with anorexia, nausea and vomiting. The abdomen is distended and the stomach may be outlined upon percussion. If the obstruction is of long standing and food is being forced into the stomach, the walls will be forced to stretch, so the dilatation is soon produced. The symptoms of dilatation supervene.

DILATATION OF THE STOMACH.

Definition.—An incoordination in which there is a relaxation of the walls of the stomach and an increase in the size of its cavity, characterized by decomposition of the food, and paroxysmal vomiting.

Adjustment.—S. P. is the specific adjustment.

Pathology.—Dilatation of the stomach may be either atonic or obstructive. In the former the local subluxation causes an impingement upon the motor nerves, conveying motor impulses to the muscular fibres of the stomach wall, preventing these muscles from obtaining sufficient impulses to keep the muscles in normal tonicity, hence their relaxation and consequent dilatation of the stomach. In the other form there is an obstruction occurring at the pyloric opening, which may be in the form of a growth; pressure from the outside, as in tumor of the head of the pancrea, or from hypertrophic stenosis. The opening being closed and food accumulating within the stomach, the abnormal weight will tend to stretch the stomach wall, so that the final result is dilatation.

Symptoms.—The abdomen over the region of the stomach is tender, and this tenderness is traceable back to the spine at the region of S. P. There is a feeling of fullness and distress in the epigastric region, with eructations of gas and bitter fluid. The appetite is usually good, but there may be anorexia in some cases, or at times in all cases. The bowels are constipated and the urine is scanty. The patient becomes emaciated and weak, the skin is dry, and there is excessive thirst. This extreme thirst is adaptative to assist in washing small particles of food through the partially obstructed opening of the pylorus. Vomiting is the most characteristic symptom, and it has a peculiar paroxysmal regularity not found in other diseases. This vomiting occurs every two or three days, depending upon the extent of the dilatation and the size or capacity of the stomach. At the period of vomiting large quantities of partially digested or undigested food is emptied from the stomach. In some cases as much as two or three gallons is vomited, and when permitted to stand will separate into three distinct layers. The upper layer consists of a brownish gray froth, indicating the presence of fermentation or decomposition; the middle layer consists of the dark fluid, the gastric juice and liquid food that have been taken into the stomach, and the bottom layer consists of a sediment of undigested food. This vomit is of an acid reaction, has a fetid odor, and continues periodically as long as the obstruction to the pylorus exists.

Upon inspection it will be seen that the abdomen is distended, and splashing sounds can be heard by placing the ear in contact with the abdominal wall over the region of the stomach.

Emaciation and debility are marked because of improper nutrition, and the patient finally yields to extreme weakness.

The adjustment restores normal motor tonicity to the muscular fibres forming the stomach walls, whereby

peristaltic motion is regained, the cavity of the stomach becomes normal and symptoms subside.

NEUROSES OF THE STOMACH.

A neurosis is a condition in which the function of a part is abnormal, but in which there is no discoverable pathological change in the structures of the part affected. This is undoubtedly because the functions affected are such as will not produce structural changes, or that the degree is so slight that the change cannot be seen.

There are four neuroses of the stomach, but many authorities recognize five, as follows: Hyperchlorhydria, hypochlorhydria, hypersecretion, gastralgia and nervous dyspepsia. The latter is a general term that may include any or all of the first three.

HYPERCHLORHYDRIA.

Definition.—An abnormal condition of the stomach in which there is an over-abundance of H Cl in the gastric juice.

Adjustment.—This is caused by pressure upon the secretory nerves emitting from the 13th or 14th intervertebral foramen and leading to the secretory cells of the gastric glands. The pressure is produced by a local vertebral subluxation at S. P., and by adjustment of this subluxation the pressure is removed and the flow of impulses to the secreting cells becomes normal, so that the character of the secretion is restored to normal.

There is no pathological or structural change occurring in any of the neuroses.

Nerve Tracing.—The tenderness is traceable from the region of S. P. on either side and follows the intercostal spaces to the epigastric region, becoming diffuse over the region of the stomach.

Symptoms.—During intervals the patient may experience no symptoms, but at times, and especially after

eating, there is a feeling of discomfort, which later develops into a burning pain. This burning pain is produced by the over-acid juice coming into contact with the delicate and sensitive mucous membrane of the stomach.

There may be a sensation of weight or pressure in the episgastrium, and there is pyrosis, with regurgitation of bitter fluid at times. The patient is frequently the subject of severe and prolonged vertical headaches, and at times may have nausea and vomiting. Vertigo is common, the bowels are usually constipated and the urine is scanty and highly colored. The diagnosis is reached by a chemical test of the gastric juice, when it is found to contain over .02% H. Cl.

HYPOCHLORHYDRIA.

Definition.—An abnormal condition of the stomach in which there is a deficiency of H Cl in the gastric juice.

Adjustment.—This is caused by a vertebral subluxation at S. P., which impinges the secretory nerves leading to the secretory cells of the gastric glands and inhibiting the normal secretion of gastric juice. The nerve tracing is the same as in other affections of the stomach.

Symptoms.—The first indication of this form of neurosis is abdominal discomfort, which is soon followed by abdominal distention and belching of gas. The symptoms are present only when the stomach contains food. The gas is the result of fermentation, which occurs from the deficiency of H Cl. The gaseous distention of the abdomen may be such that it interferes with respiration and with the action of the heart. There is the taste of a sour stomach, the tongue is coated and fissured, and there may be vomiting at times. When the stomach is entirely empty the symptoms are absent. Chemical analysis is the only positive proof of deficient H Cl in the gastric juice.

HYPERSECRETION.

Definition.—An abnormal condition of the stomach in which there is an over-abundance in the secretion of normal gastric juice, and is caused by an S. P. subluxation. 6-7-

Adjustment.—The specific adjustment for hypersecretion of gastric juice is at S. P., either the sixth, seventh or eighth dorsal vertebrae, as will be determined by vertebral palpation. This is a condition of excess function of the secretory glands of the stomach, in which the quality of the secretion is normal, but in which the quantity is in excess.

Symptoms.—This begins gradually with a feeling of epigastric uneasiness and fullness. Later pain, with nausea, and vomiting occurs. The vomit consists mostly of normal gastric juice of normal acidity. The mucous membrane of the esophagus and throat becomes red and raw from coming in contact with the strong acid secretion. This makes swallowing difficult. The vomiting occurs in paroxysms lasting from one to three hours each, and may be more or less continuous or periodical, in which case for long periods of weeks or months the symptoms may be absent or latent. The quantity of juice vomited per day may vary from one quart to one or two gallons. In some cases the attacks may have intermissions of several weeks or months, which is followed by many repeated attacks. In a few cases the attacks are continuous and vomiting occurs daily. The adjustment of the subluxation at S. P. relieves the pressure from the nerves leading to the stomach and restores normal flow of secretory impulses to the gastric glands, which causes them to function in a normal manner, thus restoring the quantity of the secretion to normal.

GASTRALGIA.

Definition.—An incoordination of the stomach in which there is a paroxysmal pain, not arising from any structural change in the organ.

Adjustment.—This is caused by an S. P. subluxation, which impinges the motor nerves leading to the muscular coat of the stomach, producing a muscular cramp.

Symptoms.—This is more frequently a symptom than a specific incoordination, and when a symptom of some other disease is not considered as a neurosis. The onset is with nausea, a feeling of epigastric fullness, faintness, headache and vertigo. The pain is severe and agonizing, and occurs in the middle of the epigastric region, radiating outward in all directions from this point. Tenderness is traceable from the abdominal region along the intercostal spaces to the spine. During the attack of the pain the face is pale and has an anxious expression, the hands and feet are cold, and the skin may be covered with a cool perspiration. The entire attack may last from a few minutes to one or two hours. If the attack has a long duration the patient falls into a deep sleep from the extreme exhaustion. Many times the attacks may be suddenly brought on by drinking cold water or partaking of an over-hearty meal, but many such cases have become entirely free from the attack after a single Chiropractic adjustment.

NERVOUS DYSPEPSIA.

Definition.—An incoordination of the stomach in which there are alterations in the quantity and quality of the gastric juice, accompanied by nervousness, and most frequently found in neurotic individuals.

Adjustment.—Atlas and S. P. The atlas adjustment being given for the general condition of nervousness and the S. P. being specific for the gastric neurosis.

Nerve Tracing.—This is the same as found in the other neuroses.

Symptoms.—The onset, course and duration of this is very variable. It frequently begins as any of the other neuroses, with epigastric oppression, distress, eructation of

gas and bitter fluid, loss of appetite; yet many patients have an extremely capricious appetite, pyrosis and a coated tongue. Heart Burn

There may be severe paroxysms of gastralgia, which is often relieved by the partaking of food. There may be numbness of the extremities, coldness of the skin, flushes of the face and neck, occasionally hiccough and extreme hunger, and in most cases there is the formation and belching of gas. As nervous dyspepsia may include any or all of the other neuroses, their symptoms may predominate. Adjustments properly given at S. P. will soon restore normal function in the stomach, after which the indigestion disappears and the patient gains in flesh and strength.

SPLANCHNOPTOSIS OR GLENARD'S DISEASE.

Definition.—A general term applying to the falling or prolapsis of any or all of the abdominal viscera. There are various forms, as follows:

Gastroptosis is a prolapsis of the stomach.—Adjustment, S. P.

Nephroptosis is a prolapsis of the kidney.—Adjustment, K. P.

Splenoptosis is a prolapsis of the spleen.—Adjustment, Spl. P. 9th Dorsal

Hepatoptosis is a prolapsis of the liver.—Adjustment, Li. P. 4 Dorsal

Enteroptosis is a prolapsis of the intestine.—Adjustment, U. P. P.

Pathology.—The local subluxation produces pressure upon the motor nerves leading to the structures holding the viscera in situe, and because of the loss of motor function, due to this pressure, the ligaments become relaxed and atonic, the weight of the organ is then sufficient to permit it to drop, and stretches the relaxed ligaments.

Nerve Tracing.—The tenderness is from the local zone of the subluxation to the region over the organ prolapsed.

Symptoms.—If but one organ is displaced and the displacement is slight, the symptoms may be latent or absent, but since prolapsis of an organ is often associated with enlargement of the organ, pressure symptoms are present in the majority of cases. There is a feeling of weight, pressure or bearing down in the abdomen and constipation, due to the pressure upon the intestine. The abdomen may be distended, due to the enlargement or the displacement. The digestion may be poor and the patient may be weak, but, as a rule, does not lose much flesh. The prolapsed organ may be palpable and its outline can be determined by percussion.

The adjustment will release the pressure upon the nerve and permit the normal flow of motor impulses to the structures holding the viscera in place, whereby these structures will again regain their normal tonicity, hence will contract and slowly draw the displaced organ into the normal position.

ACUTE CATARRHAL ENTERITIS.

Definition.—An acute catarrhal inflammation of the mucous membrane lining the intestines, characterized by fever, pain, tenderness and looseness of the bowels.

Adjustment.—C. P., K. P. and upper lumbar.

Pathology.—The mucous membrane lining the small intestine is the location of inflammation or excessive heat, in which there is redness from the hyperemic vessels and swelling from an effusion of serum into the surrounding tissues. The mucous follicles are inflamed and give off an abnormal exudation of transformed mucus, serum and fibrin. In the more severe cases the membrane may become destroyed, and small areas of ulceration will result.

Nerve Tracing.—Tenderness is traceable from the upper lumbar region and follows a course over the crest of the ileum to the region over the inflamed intestines.

Symptoms.—This is the most common condition in which there is diarrhoea of a mucous stool. The onset is with a moderate diarrhoea, abdominal pain, loss of appetite, and a slight fever of 101 to 103 degrees. The skin is hot and dry, the face is flushed, the pulse is strong and rapid, the respirations are increased in frequency, and there is marked weakness for the slight degree of fever that is present. The intestinal inflammation may be limited to the mucous membrane of the duodenum or the stomach and duodenum, in which case it is called duodenitis or gastro-duodenitis, and is marked by localized tenderness in the upper and right side of the abdomen. In duodenitits there is costiveness in place of diarrhoea, often resulting in impaction of fecal matter in the intestines. The ileum and jejunum are most frequently affected, in which case the tenderness is diffuse over the center of the abdomen, and there is severe diarrhoea of a mucous and lienteric stool. Occasionally blood and bile will be passed in the stool, but when the inflammation is localized in the colon the stool is watery or soup-like, and contains larger quantities of mucus than in any other intestinal inflammation. Proctitis is an inflammation of the mucous membrane of the rectum, and is marked by the passage of considerable quantities of mucous and pus, and by persistent tenesmus.

Acute enteritis can be distinguished from dysentery by the less severe symptoms of prostration, absence of tenesmus and griping, less frequency in the evacuation of the bowels, and absence of the bloody mucus stool. and the absence of Bacillus Dysenteriae.

CHRONIC CATARRHAL ENTERITIS.

Definition.—A prolongation or continuation of the acute form, characterized by chronic diarrhoea.

Adjustment.—K. P. and upper lumbar.

Pathology.—The local lumbar subluxation causes pressure upon the calorific nerves leading to the mucous membrane lining the small intestine, and also colon in some cases. This brings about an inflammation or excessive heat, with hyperemia, swelling, redness, and exudation of a transformed mucus and serum into the lumen of the intestinal tract. The adjustment of the local lumbar subluxation removes the pressure from the calorific nerves leading to the mucous membrane of the intestines, thus restoring normal heat to the part.

Nerve Tracing.—In the chronic form the course and distribution of tenderness is the same as that found in the acute form; however, tenderness is not so marked in the former.

Symptoms.—Preceding the arrival of the incoordination to the chronic stage, it usually passes through the acute, from which it merges into the chronic. Thus the symptoms of acute enteritis will have preceded the chronic form. Very often the colon alone is affected, in which case there is a local tenderness along the course of the colon, and a mucus stool containing undigested food.

Because of this improper digestion in the inflamed intestine the body suffers from improper nutrition, hence becomes emaciated and anemic. When the patient sees his emaciated and debilitated condition he often becomes melancholic and loses interest in life, or may become the subject of mental depression. The effect of the adjustment in chronic enteritis will be the same as in the acute form. As soon as the pressure is removed from the calorific nerves and the impulses are permitted to be normally expressed, the inflammation subsides and the mucous membrane regains its normal condition and resumes its normal function.

ACUTE DYSPEPTIC DIARRHOEA.

Definition.—A condition of the small intestine in which there are defects in the various intestinal secretions or

deficient peristalsis, or both, resulting in the decomposition of the chyle, and characterized by extreme looseness of the bowels.

Adjustment.—C. P. and K. P. for the fever, and second lumbar for the local incoordination of the small intestines.

Pathology.—There is a slight inflammation of the mucous membrane of the small intestines, with the characteristic conditions common in inflammations of mucous membranes. The inflammation is not catarrhal, and is not accompanied by the passage of large quantities of mucus. There are alterations in the secretion of the intestinal juices and loss of motor power in the intestinal muscles.

Symptoms.—This is an incoordination of children, and is most commonly found in bottle-fed children. The onset is with restlessness, irritability, a slight fever, or in the most severe cases a high fever of 104 degrees, a diarrhoea of an offensive, fluid stool which contains undigested milk, food and a very little mucus. In the severe cases where the temperature rises to 104 degrees the onset may be with a convulsion, which is followed by the above named symptoms. The case readily yields to adjustments. Many cases as young as one to three weeks have been adjusted with excellent results.

CHOLERA INFANTUM.

Definition.—An acute inflammation of the mucous membrane of the stomach and intestines, characterized by severe coliky pain, vomiting, purging and prostration.

Adjustment.—S. P. for the inflammation of the stomach, second lumbar for the inflammation of the small intestines, and K. P. for the elimination of poisons from the body and for the dissipation of heat, which is present as fever. The S. P. adjustment may also serve as C. P., as they are in adjacent zones.

Pathology.—The mucous membrane of the stomach and small intestines are inflamed and swollen from the effusion

of serum into the sub-mucous tissue. From the external surface of the mucous membrane there is an effusion of serum occurring into the fundus of the stomach and into the lumen of the intestine. As the duration of this incoordination is very short, the pathology does not pass through many stages.

Nerve Tracing.—The tenderness is traceable from the 14th and 21st intervertebral foramen on either or both sides, and extends outward around the trunk, becoming diffuse over the region of the stomach and small intestines.

Symptoms.—The onset is sudden, with a sensation of chilliness, which is followed by a rapid rise in the bodily temperature to 103 or 105 degrees. This sudden rise in the temperature is accompanied by a severe vomiting, abdominal pain, and severe purging. At first the contents of the stomach is vomited, and the stool consists of the contents of the intestines, but within a few hours after the stomach and intestines have been emptied, the vomitus and stool take on a different character, and resemble each other. Both the stool and vomitus become serous in character. The stools vary from 10 to 30 in 24 hours, and the vomiting is most persistent. There is an extreme thirst, large quantities of cold water being drunk, but soon vomited. The stools are at first fecal and have an offensive odor, later becoming yellowish and green and having a fetid odor, indicating putrifaction.

In case the temperature should increase to 106 or 108 degrees death will soon occur, or if a high temperature like this should be present at the onset, death may occur within 24 hours. Recovery usually begins between the third and fifth days, or then the symptoms of collapse may appear, indicating impending death. Though the incoordination may have lasted but a few days, there has been great emaciation, the eyes are sunken and partially closed, the mouth is open, and the lips are cracked and bleeding, the skin is cold and

clammy, the pupils are contracted, and the child finally passes into a stupor, in which the pulse becomes imperceptible, respiration is faint, and life passes from the body.

The immediate adjustment of S. P., K. P. and second lumbar will restore the normal transmission of mental impulses from the brain to the mucous membrane of the stomach and intestines, permitting the membrane to function in a normal manner, which, when accomplished, will prevent the appearance of any symptoms.

ACUTE ENTEROCOLITIS. Also called Ulcerative

Definition.—A catarrhal inflammation of the lower part of the small intestine and of the upper part of the large intestine, in which there may be a moderate degree of suppuration.

Adjustment.—K. P. and second lumbar.

Pathology.—This is also called ulcerative enterocolitis, and when in the beginning stage is marked by inflammation or excessive heat, a hyperemia of the blood vessels in the lining membrane, edema and swelling of the sub-mucosa and adjacent tissues, and an exudation which is catarrhal in character, from the mucous membrane. Later there will appear at certain points along the course of the intestinal mucosa small ulcers from one to two lines in diameter and of circular shape, which creep along or undermine the mucous membrane, and may finally coalesce, forming a larger ulcer.

The secreting glands become enlarged and soft because of the edematous swelling, but rarely, if ever, undergo ulceration.

Symptoms.—This begins with a moderate diarrhoea, the stool at first containing the contents of the intestines, and later contain mucus, which is streaked with blood. There is a loss of appetite, excessive thirst, nausea and vomiting, abdominal pain and tenderness, and an irregular fever of

102 to 104 degrees. The stools are small in quantity and semi-fluid of a greenish color, and contain both blood and undigested food. The number of stools may vary from 10 to 40 in 24 hours. The individual becomes emaciated and weak, the skin is pale or yellowish, the facial expression is dull and uncheerful, the mouth is dry, the breath is fetid, and the tongue is constantly coated.

An adjustment of the second lumbar vertebra will release the pressure upon the nerves leading to the mucous membrane of the intestine and restore normal heat, which will permit normal function and prevent any further symptoms from appearing, and effect normal digestion.

DIPHTHERIC ENTERITIS.

Definition.—An excessive heat of the mucous membrane of the small intestine, characterized by the formation and discharge at stool of a pseudo-membrane.

Adjustment.—Second lumbar and K. P.

Pathology.—The mucous membrane becomes swollen and hyperemic, and its follicles give off an exudate which is rich in fibrin. This fibrin forms a network which acts as the framework of the false membrane, and in the meshes of this framework is deposited the mucus, destroyed epithelium, serum and albumin. Shreds of the fibrin extend down into the follicles of the mucous membrane, and are only detached from the true membrane by a process of suppuration, after which the false membrane sloughs off and is discharged with the stool.

Symptoms.—The onset is rather sudden, with slight feverishness and distention of the abdomen. This distention is gaseous, and results from the decomposition of the fecaes. The abdomen is tender, and there is paroxysmal pain. This pain is produced by the passage of the stool through the intestine and tearing the false membrane loose from the mucous membrane. This tearing causes bleeding,

so that the stool not only contains shreds of pseudo-membrane, but also blood and mucus. After the discharge of a quantity of this false membrane the pain is lessened or absent for a time, or until some more membrane forms. The abdominal tenderness and soreness still remains, and may be attended by emaciation, weakness and gastro-intestinal symptoms.

The nerve tracing may be very marked in this incoordination. The tenderness follows a course from the 21st intervertebral foramen on either side, over the crest of the ilium to the region over that part of the intestine affected.

DILATATION OF THE COLON.

Definition.—A condition wherein there is a relaxation of the muscular fibres which form the wall of the colon, thus permitting it to stretch or dilate.

Adjustment.—Local in the middle lumbar region, as will be determined upon vertebral palpation.

Pathology.—The subluxation causes an impingement upon the nerve conveying the motor impulses to the muscular fibres of the muscular coat of the colon, thus causing them to lose their normal muscular tonicity and become relaxed. The degree of relaxation may be so great that the normal peristaltic motion is lost, and, as a result, the fecal matter accumulates here in the colon.

Symptoms.—On account of the relaxed condition of the colon walls the fecal matter cannot be properly forced along in the intestine, hence accumulates in the colon, producing an obstinate constipation. The intestines become impact with fecal matter, the abdomen is distended, the skin is sallow, and there is meteorism.

Constipation is a form of dilatation of the colon wherein there is a loss of the muscular tone of the intestinal walls, which lessens the peristaltic motion and prevents free movement of the bowels. This should not be confused with

costiveness, which is a dryness and hardness of the stool, due to improper secretions.

Constipation may be characterized by either an insufficient frequency in the evacuation of the bowels or by an insufficient quantity at each evacuation. A patient suffering with constipation will have dull headaches, drowsiness, a feeling of constant fullness, sallowness of the skin, and straining at stool.

The adjustment of middle or lower lumbar subluxations will restore normal motor impulses to the muscle fibres of the intestinal walls, which will permit normal peristaltic motion and normal evacuation.

DIARRHOEA.

Definition.—An abnormal frequency of a fluid evacuation of the bowels without tenesmus, and resulting from over-secretion of the digestive fluids.

Adjustment.—The adjustment for diarrhoea is very variable, depending upon the organ that takes part in the over-secretion. If the liver secretes an over-abundance of bile the adjustment is at fourth dorsal, if the gastric secretion is over-abundant adjust S. P., or the adjustment may be at K. P. or upper lumbar. The bowels being an excretory organ, will assist in elimination adaptatively. when the kidneys are abnormal, and in the attempt to accomplish this there is diarrhoea, when K. P. should be adjusted. The lumbar adjustment would be given when there is over-secretion from the intestinal mucous membrane.

Symptoms.—Diarrhoea may be acute or chronic, and is manifested chiefly by an alteration in the number and character of the stools. There is frequent evacuation of the bowels, coliky abdominal pain, anorexia and emaciation. Examination of the stool will often assist in locating the organ that is working abnormally. The list below covers the common cases.

1. Mucous stools are those in which there is a large quantity of mucus passed, and indicate an abnormal condition in the mucous membrane of the intestine. Found in enteritis.

2. Lienteric stools are those in which there is contained undigested food, and indicate intestinal indigestion. Found in enteritis and dyspeptic diarrhoea.

3. Watery or serous stools contain much serum, and indicate intestinal inflammation, as found in cholera infantum.

4. Green stools are those containing bile, and indicate an abnormal condition in the liver or in the bile ducts, as found in obstruction of the common bile duct by gall stone in the ampulla of Vater, such stone having a ball valve action.

5. Fatty stools are those containing undigested fat, and indicate an abnormal condition of the pancreas, as found in acute pancreatitis.

6. Purulent stools are those containing pus, and indicate a suppurative process in the intestine or the rupture or an abscess into the intestine, as is found in typhoid fever.

7. Bloody stools are those containing blood, and results from hemorrhage of the capillaries of the mucous membrane, as is found in cancer of the intestine or in dysentery.

ENTERALGIA.

Definition.—An acute paroxysmal pain of the intestines, resulting from a violent muscular contraction of the intestinal walls.

Adjustment.—Local in the lumbar region, as determined upon palpation of that region.

Symptoms.—This is an intestinal neurosis, and has no pathological condition. The attacks are usually infrequent

and may be brought on by a large drink of cold water, a large meal, or by excessive exercise. The onset is sudden, with severe pain situated near the umbilicus and radiating in all directions from this point. The abdominal muscles are tensed and respiration is hindered by the muscular contraction, the skin is cool and clammy, the face has an anxious expression and the features are pinched.

There may be nausea and vomiting with the attack. The attack may be intermittent in itself, or may be continuous, lasting from a few minutes to two or more hours.

If firm pressure with the palm of the hand be placed upon the abdomen in the region of the umbilicus the pain will be greatly relieved and may be temporarily stopped. An adjustment will give immediate and permanent relief. Many cases of this nature have been handled with the greatest of success.

MUCOUS COLIC.

Definition.—A secretory neurosis of the intestines in which there is the discharge of large quantities of mucus, accompanied by a severe coliky pain.

Adjustment.—Atlas, K. P. and local in the lumbar region. The local lumbar subluxation is the cause for the intestinal incoordination, but the atlas is also adjusted, as the condition always occurs in neurotic individuals, and is accompanied by many nervous symptoms that would indicate an atlas subluxation. The K. P. adjustment, as in all cases, is for the elimination of excretory material.

Pathology.—This being a neurosis, there is no marked structural change; however, the mucous follicles of the intestines are hyperactive and secrete an abnormal and transformed mucus, which forms a pseudo-membrane and offers a partial obstruction to the descent of fecal matter. This hypersecretion is not attended by any inflammation, but there may be a neurotic hyperemia of the vessels in the lining membrane.

Symptoms.—Mucous colic is nearly always sub-acute or chronic in its course, but at the same time always has an acute onset. There is gastric and intestinal discomfort, with slight indigestion for a short time preceding the onset, which is with severe pain, occurring in paroxysms, and relieved upon the discharge of a quantity of this abnormal mucus. The pain begins lightly and is located in the lower part of the abdomen, after which it increases in severity until the pain resembles that of renal colic, and after the passage of the membrane in the stool, gradually declines until more membrane is formed. The paroxysms may occur daily, but the majority of cases occur irregularly. There is very marked tenderness, which is located in each or either of the iliac fossa. There is vesical and rectal tenesmus, and the stools are often ribbon-shaped or may be cylindrical, with large casts of the intestine. The membrane can be unravelled by placing it in water and picking it apart with needles. The bodily temperature is normal, the nutrition is impaired, the patient becomes emaciated and weak, the rectum remains sore and irritable, and finally many peculiar nervous symptoms arise that can only be explained by the existence of an atlas subluxation.

Among the nervous symptoms are those of neuraesthenia and hysteria, with convulsions, stupor, coma and sometimes a pseudo-paralysis.

ULCERATION OF THE INTESTINE.

Definition.—A circumscribed area of suppuration upon a free surface, in which there is destruction of tissue.

Adjustment.—K. P. with local in the lumbar region. If on the duodenum, lower S. P. should be adjusted.

Pathology.—The local area becomes red, hyperemic and swollen at the beginning, after which the epithelial cells become broken down and undergo decomposition. This process continues until a small circumscribed area has decayed, forming an ulcer. The ulcer may be tubercular, can-

cerous, syphilitic, or may occur in typhoid fever, dysentery or simple enteritis. The exact pathology will vary according to the disease with which it is present.

Nerve Tracing.—Tenderness is traceable from the local subluxation in the spine to the area immediately over the ulcer.

Symptoms.—The symptoms are variable, depending upon the condition with which they are associated, and are indistinctive in many cases. There is usually pain and tenderness, which is greatly increased by palpation and upon coming in contact with the intestinal contents. Pus is discharged with the stool, and if the ulcer deepens into the intestinal wall small vessels will be perforated, which will give rise to hemorrhages and the passage of blood in the stool. The colon is most frequently affected and the ulcers may be single or multiple.

APPENDICITIS.

Definition.—An inflammation or excessive heat of the vermiform appendix, involving the surrounding peritoneum, characterized by fever, pain and localized tenderness at McBurney's point.

Inflammation of the appendix may be simple, ulcerative or interstitial.

Etiology.—Appendicitis is caused by a vertebral subluxation in the region of the second lumbar vertebrae, which causes pressure upon the calorific nerves leading to the vermiform appendix and produces an excessive heat in the tissues of that organ.

Pathology.—The simple form begins with swelling and hyperemia of the mucous membrane lining the appendix. The swelling results from the infiltration of serum into the surrounding cellular tissues. The serous surface becomes dry and congested, and the friction produced by the two inflamed layers coming in contact with each other gives rise

to most severe pain. The lumen of the appendix finally become occluded and the organ is transformed into a cyst.

The ulcerative type begins in a similar manner, but small ulcers form upon the mucous membrane lining the organ, which soon reach the sub-mucous and muscular tissue, and may finally perforate the wall of the appendix. The tissue of the organ may undergo suppuration and an abscess will form. The pus may either perforate into the abdominal cavity or into the intestine, or it may be absorbed and eliminated through the kidneys.

The interstitial or parietal form may have all the changes noted above, and in addition undergo a severe form of necrosis, or possibly gangrene, with perforation. The entire organ is enlarged and may be palpable where the pain is not too great. Many cases that perforate into the abdomen do recover by rapid absorption and elimination.

Nerve Tracing.—Marked tenderness is traceable from the 21st intervertebral foramen on the right side, following a course outward over the crest of the ilium to McBurney's point, which is located about the middle of a line drawn from the umbilicus to the center of Poupart's ligament. Moderate tenderness may be found over the entire abdomen, but the severe tenderness is localized over the region of the appendix.

Symptoms.—The onset of appendicitis is variable, but the majority of cases begin with a feeling of abdominal discomfort and dull aching pain in the right side. This pain increases in severity and area until respiration, coughing, or marked movement increases it beyond the endurance of the patient. In order to lessen the pain the patient lies upon the back in the recumbent posture with the right thigh flexed upon the abdomen and the right rectus muscle in a rigid state. This prevents movement of the inflamed parts, and therefore lessens the pain. Fever may be present from the start, and may begin with or without a slight chill. The temperature will vary from 101 to 104 degrees. In the great

majority of cases the bowels are costive and the fecal matter is impacted in the intestines, but in a few cases there is diarrhoea. The urine is scanty and highly colored, and contains indican. The appetite is lost, the tongue is coated, vomiting may occur, and in the male the right testicle is drawn up.

Upon palpation there is marked tenderness on the right side over the region of the appendix, and after the second day a small tumor about the size of a hen's egg is palpable; this is the enlarged appendix. The respiration is hurried and of the superior costal type, and the pulse is rapid and bounding. When the peritoneum is involved to any great extent the facial expression is anxious, the upper lip is drawn upward so that the upper teeth are uncovered, and is known as the Hippocratic countenance. If the case is simple it usually terminates with resolution, in which the inflammation subsides, the pain and tenderness lessens, the general fever subsides, the flexion of the thigh and rigidity of the right rectus muscle depart and the patient recovers in a week or ten days. If a patient in this condition is given an adjustment, recovery will be effected in two to five days. As soon as the adjustment is made and the normal flow of impulses restored to the appendix, the inflammation subsides and rapid recovery takes place.

If abscess formation or gangrene occurs it is marked by a sudden change in the course of the fever. During the simple stage the fever is regular and of moderate severity, but as soon as suppuration takes place it becomes irregular and high. There are recurrent chills, fever and sweats; this is known as the suppurative type of fever. The adjustment will have the same effect upon this form as in the preceding variety, but a longer period of time may be required to effect a complete recovery.

Differential Symptoms.—It is necessary to distinguish between appendicitis, renal colic and hepatic colic. Right renal colic differs from appendicitis in that the pain starts

in the back in the right lumbar region and radiates obliquely downward toward the bladder, the pain is sharp and darting, urination may be stopped during the passage of the calculus, the right testicle is drawn up, blood is passed with the urine, and there is no unilateral contraction of the abdominal or thigh muscles.

Hepatic colic has a sudden onset, without or with slight fever; the pain radiates into the right shoulder along the course of the 11th spinal nerve to the spine. There is jaundice, and tenderness is localized in the right hypochondriac region, the stools are clay colored, the urine contains bile pigment, and palpation and nerve tracing reveal the Li. P. subluxation and tenderness to the region over the liver. In both right renal colic and hepatic colic there is less fever and constitutional symptoms, no localized tenderness, and tumor in the region of McBurney's point, no indican in the urine, no tracing from the 21st zone on the right side, no second lumbar subluxation and no unilateral contraction of the abdominal and thigh muscles.

Chronic or recurrent appendicitis may have the same pathological condition as the simple form, except that it is in milder form.

During the intervals the patient may experience no symptoms other than that the bowels are constipated, and upon deep and firm pressure tenderness is present in the appendical region.

The attacks are the same as the acute form, but in a milder degree, the fever may be absent, the pain and tenderness are marked, and the constitutional symptoms are present as in the acute form.

INTESTINAL OBSTRUCTION.

Definition.—A condition in which the lumen of the intestine is partially or completely closed to the descent of fecal matter.

Adjustment.—The adjustment must be made local, according to the location of the obstruction and according to the findings upon vertebral palpation. The subluxation will usually be found in the upper lumbar region.

Pathology.—A great variety of conditions is capable of producing obstruction of the intestines. Among the more common conditions are strangulation, in which there is a contraction of the circular muscles of the intestinal wall; intussusception or a telescoping of the intestines, in which one part of the intestine passes into another part, as the ileum into the colon; volvulus or a condition in which there is a twisting or knotting of the intestine, or there may be a condition of fecal impaction, obstruction by impacted gall stones, obstruction due to pressure by some prolapsed organ or by some tumor that may be growing in the abdomen.

Symptoms.—Acute intestinal obstruction always begins with a severe pain in the abdomen located in the region of the obstruction. At first this pain may be coliky and intermittent, but as soon as the obstruction becomes more decided the pain is severe and continuous. There is excessive tenderness over the region of the obstruction, and this tenderness is traceable to the spine at the point where the pressure is produced. As soon as the obstruction is complete, vomiting becomes very persistent. At first the contents of the stomach is vomited, after which there is continued retching. This continued retching soon produces a backward peristalsis of the stomach, and bile enters through the pyloric valve. The regurgitating bile is then vomited and may have a fecal odor. Later fecal matter is vomited. The abdomen is distended by tympanites and no fecal matter passes through the rectum. If the obstruction is in the colon this tympanites is very marked, and is but slight when the obstruction is high in the small intestine. If the condition producing the obstruction is intussusception a small sausage shaped tumor may be palpable.

In general, there is great prostration, pallor, anxious expression on the face, rapid and shallow respirations, rapid and feeble pulse, cold sweats, and finally severe collapse and death in from three to six days.

In case the obstruction is partial or chronic the symptoms are much more mild. It is noticeable that there is infrequency of defecation, the stools are small in diameter, and if the obstruction is low in the colon, the stool is ribbon shaped, the abdomen is distended, and there is a feeling of abdominal discomfort, the skin becomes pale and sallow, occipital headaches are frequent, the appetite is poor, the body becomes emaciated, and there is so much absorption of poison from the impacted bowels that general anemia develops. This results from auto-intoxication.

CARCINOMA OF THE INTESTINE.

Definition.—A malignant epithelial growth undergoing progressive degeneration and destroying the intestinal wall.

Adjustment.—K. P. and local in the lumbar region, depending upon the part of the intestine affected.

Pathology.—This begins with an accumulation of cells beginning in the secretory glands of the intestine. These cells are of the epithelial variety and are situated upon a fibrous stroma. During the early stages there is no form of decay present and the growth has no other effect than might be produced by its pressure upon other organs. The great majority of cancers of the intestine are found in the lower part of the large intestine.

Later a process of degeneration begins in the cells which were first formed. This form of degeneration is commonly known as colloid, and progresses at a very rapid rate, destroying the intestinal wall and obstructing its lumen. A portion of the poison is being constantly absorbed and prevents the normal nutrition of the body at large, giving rise to the cancerous cachexia.

Symptoms.—So long as the growth is small and there is no suppuration in it the symptoms may be latent or absent, but as soon as it becomes large pressure symptoms are produced. Among the early pressure symptoms are constipation from pressure upon the intestine itself, edema of the lower extremities from pressure upon the veins draining that part, feeble pulse in the femoral artery from pressure upon that artery, and possibly irritability of the bladder from interference with its function.

As soon as suppuration begins there is an intermittent dull, gnawing, burning pain in the pelvic region, with a sensation of weight and bearing down. Upon palpation of the abdominal viscera the tumor may be felt. Anemia and cancerous cachexia develop from the interference with nutrition, resulting from the presence of toxines in the blood and serum of the body. Pus is passed with the stool, and at times it may also contain blood which has been effused from the perforation of blood vessels by the ulceration. The patient becomes greatly emaciated and debilitated, the skin is of a dark, yellowish color, the appetite is poor, the abdomen is distended, and if the growth is of sufficient size to produce obstruction there will be vomiting of a fecal character, with signs of collapse and sudden death.

DISEASES OF THE LIVER.

THE CORSET LIVER.

Definition.—The corset or lacing liver is an abnormal form of the organ resulting from continued pressure of the ribs upon the lower portion of the right lobe.

Adjustment.—This condition is caused by the tight lacing of the corset, and if there is no vertebral subluxation at Li. P., by removing the pressure the organ would gradually assume its normal shape by a process of adaptation. If there is a subluxation at Li. P. it should be adjusted, so that mental impulses may reach the liver and carry on the work of adaptation.

Symptoms.—Upon inspection it will be seen that the waist is constricted, yet the patient may suffer no symptoms. Most cases are marked by a sensation of weight and bearing down in the abdomen. Upon palpation the lappet can be plainly felt as low as the horizontal umbilical line. This lappet or laced off portion may be connected to the rest of the liver by a thin fold of connective tissue, but has lost all of its function. Occasionally the transverse colon will get in the groove made by the pressure, which will render it hard or impossible to determine whether or not it is continuous with the remainder of the right lobe.

PROLAPSIS OF THE LIVER.

Definition.—A condition in which the structures holding the liver in position become relaxed and permit the organ to drop.

Adjustment.—This is caused by a subluxation at Li. P. which produces pressure upon the motor nerves leading to the ligaments which hold the liver in position, causing them to relax and permitting the weight of the organ to carry it downward. These ligaments have lost their tonicity and have stretched. By an adjustment of the causative subluxation the motor impulses will be permitted to flow unhindered to these ligaments and will give to them their normal tonicity, whereby they will again contract and gradually draw the liver into its former normal position.

Nerve Tracing.—The tenderness is traceable from the 11th intervertebral foramen outward over the scapular region and beneath the axilla to the right hypochandriac region.

Symptoms.—Many cases exist without giving rise to any symptoms, but most cases have a few subjective symptoms as well as physical signs. There is a sensation of pressure, weight and bearing down in the right side, and a feeling of fullness and discomfort after eating. This sensation of discomfort may amount to pain in some cases, the

pain radiating along the course of the nerves to the region of the right shoulder and the fourth dorsal vertebra.

Upon percussion the area of hepatic dullness is increased downward to the right, and upon palpation the organ can be felt. The lower portion of the right lobe may be as low as the horizontal umbilical line. Upon inspection the right side may be seen to bulge more than the left. This condition is more commonly met with in lean individuals, and especially women who have born many children and whose abdominal walls are relaxed and pendulous. The adjustment will restore normal motor activity in the atonic ligament, which will correct the abnormality.

ACUTE CATARRH OF THE BILE DUCTS.

Definition.—This is the condition most commonly spoken of as simple jaundice or icterus, and is an acute catarrhal inflammation or excessive heat in the mucous membrane lining the bile ducts, and is characterized by gastro-intestinal disturbances and a yellowish discoloration of the skin.

Adjustment.—The adjustment is at Li. P. and K. P. The local Li. P. subluxation causes the inflammation of the membrane lining the duct, which partially obstructs it and results in the backing up of the bile. The K. P. adjustment is for the purpose of increasing the elimination of waste products, which will include the bile pigment that is scattered in the fluids of the body.

Pathology.—The excessive heat produces a swelling of the mucous membrane and an hyperemia of the blood vessels. The swelling results from an infiltration and accumulation of serum in the mucous and sub-mucous tissue of the bile ducts. The duodenum may be similarly affected, and the inflammation of the bile ducts may be an extension of a gastro-duodenitis. The swelling lessens the size of the lumen of the duct and prevents the normal flow of bile into the duodenum, thus it is retained in the liver and absorbed

from that organ by the fluids of the body and carried to all parts.

Nerve Tracing.—Tenderness is traceable from the 11th intervertebral foramen on the right side and follows a course over the scapular region, beneath the axilla to the right hypochondriac region.

Symptoms.—In a few cases there are no symptoms other than a moderate or slight jaundice, but most cases begin with epigastric distress, anorexia, nausea and vomiting, a coated tongue, fetid breath, and a slight fever of 101 or 102 degrees. After a few days' duration the jaundice becomes noticeable, at first as a slight sub-icteric tint in the conjunctiva, and later is apparent over the cutaneous surface of the entire body. The urine is very dark in color, because of the presence of bile pigment which the kidneys have extracted from the fluids of the body. The stools are of a light or clay color, because of the absence of bile, and may have undergone putrifaction while in the colon, therefore usually have a fetid odor. There may be a flushing of the bowels, or at times there may be constipation. There is a dull, temporal headache which is accompanied by mental dullness and general irritability. The skin may be excessively itchy. The liver may be swollen and tender, but this rarely occurs in an acute attack of simple jaundice. The adjustment at Li. P. will restore the normal flow of impulses to the bile ducts and reduce the excessive heat to normal. This will cause the swelling to subside and permit the lumen of the duct to resume its normal size, which will permit the free flow of bile into the intestine, where it belongs, and the subsidence of all symptoms indicating obstruction of the duct. The K. P. adjustment will permit a greater flow of impulses to the kidneys, thus giving to them more power with which to carry on their work of elimination, thus enabling them to rid the body of the bile pigment which is scattered throughout its fluids and secretions.

CHRONIC CATARRH OF THE BILE DUCTS.

Definition.—This is a continuation of the acute form in which the bile ducts become greatly obstructed, and is usually associated with a stone lodged in the ampulla of Vater.

Adjustment.—Li. P. and K. P. Sometimes the eighth dorsal is adjusted for the lower part of the common bile duct, as it is adjacent to and in the same zone as the upper part of the duodenum.

Pathology.—Chronic catarrh rarely occurs unless there is some additional obstruction in the common bile duct which is capable of keep up a continual irritation. This is most frequently done by a gall stone which has become lodged in the ampulla of Vater and which has a ball valve action; that is, it is capable of slight movement with the change of position, so that at times the obstruction is complete and at times only partial.

In addition to the obstruction offered by the lodged stone there is a chronic catarrh, which produces a swelling and hyperemia of the mucous membrane lining the common duct, so that the bile is not permitted freedom to flow through its normal channel, but is dammed back by this obstruction and absorbed by the blood; serum and lymph being carried to all parts of the body, and the pigment becomes deposited in the skin and elsewhere, giving rise to the condition known as jaundice.

Symptoms.—The nerve tracing and area of tenderness is the same as in the acute form. If the obstruction is complete there is an intense jaundice without fever, which is preceded by a history of previous attacks of hepatic colic. Death would soon occur if the obstruction were complete, as the secretion of an organ is a poison to that organ when it is retained in the organ for a great length of time after being secreted. The great majority of cases of chronic catarrh of the common bile duct have a long course, indicating that

the obstruction is only partial. There is a history of past attacks of hepatic colic, and even during the course of the chronic jaundice there may be attacks of severe pain in that region, indicating the movement or passage of a calculus. This painful attack is accompanied by an irregular fever, with chills and sweats. The sweat and other secretions are tinted by the presence of bile pigment. The conjunctiva is deeply icteric, the stools are pale and clay colored, but may contain large quantities of bile at times when the stone has so changed its position that it permits the flow of bile; the liver and gall bladder may be enlarged at times and may be slightly tender.

The patient becomes emaciated and weak, the skin is intensely itchy, the digestion is poor and the temper is irritable. Should the impacted stone pass through the opening into the duodenum, the pain and jaundice will immediately cease, and recovery will occur within a short time. This is frequently done.

The adjustment will restore normal motor tonicity and normal calorific impulses to the common duct, whereby the inflammation will subside, thus reducing all swelling due to the inflammatory process and permitting the stone to pass with greater ease.

SUPPURATIVE INFLAMMATION OF THE BILE DUCTS.

Definition.—An inflammation of the common and smaller bile ducts in which there is suppuration or a process of decay.

Adjustment.—Li. P. and K. P., possibly in combination with eighth dorsal vertebra.

Pathology.—This is the same as in the preceding form of jaundice, except that the inflammation is suppurative in character, and the pus formed through the suppurative process collects, forming multiple or single abscesses.

Symptoms and Nerve Tracing.—The tenderness is traceable from Li. P. over the scapula and beneath the axilla to the region of the liver, and the degree of tenderness in the region of the liver is very great.

The symptoms of jaundice are the same as described in the preceding disease, but in addition there is a continuously present remittent fever, which is typical to suppuration. The urine will contain indican, the liver is swollen and tender, there is great loss of flesh and strength, there is a throbbing pain in the region of the liver, which is increased upon deep breathing, and if the pus forms into an abscess it may be palpable and may perforate into the intestine, stomach or peritoneum.

ICTERUS NEONATORUM.

Definition.—A jaundiced condition of the new-born.

Adjustment.—Li. P. and K. P.

Pathology.—There are two forms, the physiological and the pathological. In the former there is a simple inflammation or excessive heat in the mucous membrane lining the common bile duct, which causes it to swell and partially or completely close its lumen, so that the bile is unable to pass into the duodenum.

The pathological form is severe and usually fatal to life, but it is extremely rare. In this form there is complete obstruction, obliteration or absence of the common bile duct, so that it is impossible to have any outlet for the passage of the bile from the liver.

Symptoms.—The mild or physiological form is common, and is marked by the symptoms of simple icterus. The conjunctiva is slightly discolored, as is the skin; the fecal matter is light or clay colored and of a fetid odor, and the urine may contain a trace of bile. This form usually disappears in from four to fourteen days.

The pathological form is marked by a severe jaundice, which increases in intensity; by bile-stained urine, clay-colored stools, great weakness and poor nutrition. This is commonly found in cases of congenital syphilis, and is a fatal condition.

STENOSIS AND OBSTRUCTION OF THE COMMON BILE DUCT.

Definition.—A closing or occlusion of the common duct, either from pressure from without, growth within, or by the lodgement of any foreign substance in the duct itself.

Adjustment.—K. P. and local. This local will most frequently be Li. P., but may vary according to the condition causing the pressure or obstructing the common duct.

Pathology.—Very commonly the obstruction is due to a gall stone that has become lodged in the ampulla of Vater, but aside from this the common duct may be pressed upon by a growth or tumor of the head of the pancreas, or by a tumor of the pylorus or other structure in that region. The obstruction could be produced from laceration and adhesion from the previous passage of a calculus.

Symptoms.—The symptoms are similar to other forms of chronic jaundice. The icterus is first seen in the conjunctiva and later in the skin; the stool is of a light color, while the urine is heavily colored with bile pigment; the liver is slightly enlarged and tender, the gall bladder is enlarged and may be prolapsed; there is dull pain in the right hypochondriac region, which radiates upward into the right shoulder, and there may be slight and irregular fever, with gastric and intestinal disturbances. Palpation and nerve tracing will greatly assist in determining whether the obstruction is due to pressure from a tumor on the head of the pancreas, tumor of the pylorus, or any other form of obstruction that may be suspected.

CARCINOMA OF THE GALL BLADDER.

Definition.—A pernicious and malignant growth of epithelial tissue, progressively destroying the wall of the gall bladder and filling its cavity.

Adjustment.—Li. P. and K. P.

Pathology.—The tumor consists of epithelial cells, which are situated upon a fibrous stroma or base, and in which there is progressive colloid degeneration, ulceration and decay.

Nerve Tracing.—Marked tenderness will be traceable from the region of the 11th intervertebral foramen, over the scapular region and beneath the axilla to the region over the gall bladder, which is at a point where a line drawn from the acromian process of the scapula to the umbilicus bisects the ninth costal cartilage, or it is about one and one-half inches below the ensiform cartilage and about one and one-half inches to the right of the median line.

Symptoms.—The onset is gradual, with a feeling of discomfort and weight in the right side. Later this sensation amounts to a dull aching pain which is subject to paroxysms, during which it is severe. The skin and conjunctiva indicate a chronic jaundice, and the emaciation and debility indicate great nutritional impairment. The gall bladder is enlarged and tender, and upon palpation the tumor may be felt. The cancerous cachexia soon develops, with great emaciation and weakness, indicating cancer. There may be melena in the stool, and occasionally there is ascites. General and irregular fever becomes apparent toward the end and the cancers may become multiple, giving to the liver and right side a peculiar nodular appearance. The duration is from one to one and one-half years.

GALL STONES.

Definition.—A crystalization and cohesion of the calcarious elements of the bile, which by the peristalistic

motion of the gall bladder form the secretions into a stone or calculus.

Adjustment.—Li. P.

Pathology.—The Li. P. subluxation causes pressure upon the nerves conveying the calorific impulses to the gall bladder, thus producing the excessive heat, which will crystalize the mineral matter in the bile. The minute crystals will adhere to any solid substance with which they may come in contact, and these are usually particles of bile pigment. Thus the small calculus is begun, and as time progresses it collects other crystals until the stone may attain a large size. The crystals consist of a variety of material, but most of them consist of cholesterin and lime salts. If the stone is cut in two the various layers can be seen, some darker than others, which indicates that at times the bile contains more pigment or coloring matter than at other times. The number of stones will vary from one to three or four hundred.

Nerve Tracing.—Gall stones may exist with little or no tenderness traceable from the spine to the region of the gall bladder. If tenderness is traceable it follows the usual course, as previously described.

Symptoms.—Gall stones is also known as cholelithiasis, and so long as the stones remain in the gall bladder they may present no symptoms other than upon abdominal palpation in the region of the gall bladder a slight degree of gall stone crepitus may be felt. This, however, would be only possible in a thin individual and when many stones existed in the gall bladder. As soon as a stone leaves the gall bladder and begins to pass through the cystic duct intense pain is produced. This is known as hepatic colic.

Hepatic colic begins suddenly, with an attack of excruciating pain located in the right hypochondriac region and radiating upward and to the right into the right shoulder and right arm. The pain is agonizing, and the patient may

roll around upon the floor in a drenching sweat and with an expression of intense suffering upon the face. The abdominal and all other muscles are in a state of contraction, thus preventing normal respiration and possibly producing a slight cyanosis. The face is flushed and covered with perspiration, the conjunctiva is jaundiced, and this jaundice may be noticeable over the entire body; there may be vomiting and sometimes syncope. In a few cases there is a slight fever of 101 or 102 degrees, with a feeble and rapid pulse and extreme prostration. The liver may be swollen and tender, the urine may contain bile pigment and the stool be of a light color, but after the passage of the stone the stool may contain a large quantity of green bile which had previously, during the passage of the stone, been dammed up in the liver and gall bladder. The attack may last from a few hours to a week or longer, with intermissions while the stone is in a resting state, but as soon as it again begins to move the pain reappears.

Although the pain is intense and the prostration great, but few cases are fatal, and those that are fatal usually succumb to syncope.

It is necessary to distinguish between the hepatic colic and right renal colic. The pain of right renal colic begins in the back about the region of the kidney and extends obliquely across the lower part of the abdomen, while in hepatic colic the pain is located in the right hypochondriac region and radiates into the right shoulder; in renal colic there is hematuria and no jaundice, which is reversed in hepatic colic. In renal colic the stone may be passed with the urine shortly after its passage through the ureter, and in heptic colic the stone will be passed with the fecal matter.

In appendicitis the pain is localized at McBurney's point, and there is no right shoulder pain or jaundice. The fever of appendicitis is higher and more constant, and the urine contains indican and not bile. The palpation and nerve tracing will further differentiate between the two.

Effects of Gall Stones.—When the stone becomes lodged in the cystic duct at a point below the opening of one or more of the hepatic ducts the gall bladder becomes enormously distended, so that it is plainly palpable, and sometimes is prolapsed as low as the umbilicus. The enlarged gall bladder moves with respiration, and upon palpation the gall stone crepitus may be perceived. There is no jaundice, however, and if the obstruction is of long standing the contained bile will be absorbed and the size diminished.

If the stone becomes lodged in the common bile duct the symptoms are those of chronic obstructive jaundice, as previously described. Usually when the stone becomes lodged in the common duct it is in that dilated portion near where it empties into the duodenum, but in some cases there is a series of stones extending throughout the entire length of the duct.

ACUTE CHOLECYSTITIS. Inflammation of Gall Bladder

Definition.—An inflammation or excessive heat in the gall bladder, characterized by jaundice and severe pain.

Adjustment.—Li. P. and K. P.

Pathology.—The local liver place subluxation causes an impingement upon the calorific nerves leading to the liver and causes an inflammation. The inflammation produces a swelling and hyperemia of the membranes and vessels of the organ, and the mucous membrane lining the bladder gives off a muco-purulent exudation, which passes off with the bile. When the external surface is involved there is an effusion of serum from its external surface, and adhesions may occur between the gall bladder and surrounding structures.

Nerve Tracing.—The degree of tenderness in this incoordination is very great and is traceable from the intervertebral foramen in the region of Li. P. outward over the scapular region, beneath the axilla to the right hypochondriac region immediately over the gall bladder.

Symptoms.—This begins rather suddenly, with pain, mild at first, but later becoming severe, located in the upper and right part of the abdomen. This pain steadily increases in severity and is accompanied by anorexia, nausea and vomiting. The degree of prostration and localized tenderness is very great; there is a moderate jaundice, respiration is painful and is of the superior costal type, as the abdominal muscles are retracted; there is constipation and sometimes attacks of hepatic colic. The symptoms will vary according to the extent and kind of inflammation present. If the inflammation should become suppurative there will be irregular chills, fever and sweats and great prostration. An abscess may form from the accumulated pus, with its attending symptoms.

HYPEREMIA OF THE LIVER.

Definition.—An abnormal fullness or over-distention of the blood vessels of the liver with blood.

Adjustment.—Li. P. This local subluxation produces pressure upon the motor nerves leading to the minute muscular fibres of blood vessel walls, causing them to lose their normal tonicity, thereby becoming dilated and congested with blood.

Pathology.—The vessel walls become relaxed, as described above, and the liver becomes enlarged and congested. If the congestion is very marked it gives to the liver a peculiar appearance known as the nutmeg liver. In the passive form there may, in addition to the above described condition, be some obstruction to the return of the blood from the liver, such as cirrhosis of the liver, in which the capsule of Glisson is thickened and presses upon the vessels which are imbedded in it, or pressure upon the inferior vena cava, or valvular disease of the heart, which interferes with the systemic circulation. Any or all of these would add to the degree of congestion.

Symptoms.—There may be slight tenderness, having a course and distribution similar to that of other diseases of the liver. In the active form the only symptom present is a sensation of fullness and discomfort in the right side of the abdomen after eating a hearty meal. This is due to the fact that more blood is needed in the liver during the formation of bile, which is required for digestion, and which is being secreted during gastric digestion. The vessel walls are weak and stretched to an unusual degree with this added supply of needed blood. The adjustment of the subluxation at Li. P. would restore the normal flow of motor impulses to the vessel walls and give to them their normal tonicity, whereby they would be able to withstand the added pressure due to the additional supply of blood during digestion.

The passive type is much more common, and in this form the hyperemia is continuous, giving rise to the nutmeg liver. The liver becomes greatly enlarged and the lower border may be palpable as low as the horizontal umbilical line. If there is tricuspid incompetency the entire organ will pulsate during the systole of the heart. There is a feeling of weight and discomfort in the right hypochondrium, and upon palpation considerable tenderness may be elicited. There may be a slight jaundice, the stools are clay colored, the urine is dark and contains bile pigment, there may be ascites, enlarged spleen and marked gastro-intestinal symptoms.

The adjustment may vary slightly here, for if the valvular incompetency of the heart was an important factor in the production of the congestion it would be necessary to adjust H. P. to correct this incompetency. If there were a tumor pressing upon the inferior vena cava it would be necessary to adjust locally for that tumor, as would only be determined by careful analysis of each individual case.

ABSCESS OF THE LIVER.

Definition.—A circumscribed inflammation of the hepatic cells in which there is suppuration and pus formation, characterized by tenderness and disordered function of the organ.

Adjustment.—Liver place and K. P.

Pathology.—This is also known as suppurative hepatitis, and the abscess may single or multiple. The beginning inflammation is attended by hyperemia and swelling throughout the circumscribed area. The inflammation being of a suppurative character, the hepatic cells which are involved soon undergo disintegration and pus forms. The pus forming area is soon encapsulated by a membrane called the pyogenic membrane. This may finally rupture and discharge the pus, or the pus may be absorbed and the site of the abscess will be marked by a scar.

Nerve Tracing.—Tenderness is traceable from the region of the fourth dorsal vertebra beneath the axilla to the right hypochondriac region over the liver.

Symptoms.—This begins with hepatic and right shoulder pain of a dull aching character, and is increased in severity at times, as in deep breathing, lying upon the left side and in fast walking. The pain radiates up into the right shoulder. There is slight jaundice and an irregular fever of 101 to 105 degrees. If the abscess is large or if they are multiple there are recurrent chills, fever and sweats. Deep breathing forces the diaphragm downward, so that it may press upon the abscess and is extremely painful, hence deep breathing is suppressed. The patient will lie upon the affected side. There is gastric and intestinal symptoms, consisting of anorexia, nausea, and at times vomiting; the bowels are constipated, but should the abscess be drained into the intestines there will be diarrhoea containing pus. The liver is enlarged and tender, and if the abscess be located superficially it may be palpable, providing the de-

gree of tenderness is moderate enough to permit palpation. The liver is smooth and tender and may reach as low as the umbilicus. Many of the lymphatic and abdominal glands may be swollen, though no marked symptoms may come from them.

The abscess may perforate into the peritoneal cavity, with an accompanying peritonitis, or into the intestine. In other cases the pus may be absorbed, giving rise to pyemia, and it is in these cases that K. P. should be given careful attention so that elimination may be at its maximum.

CIRRHOSIS OF THE LIVER.

Definition.—An incoordination in which there is an hypertrophy of the connective tissue of the organ and an atrophy of the secreting cells.

Adjustment.—Li. P. and K. P.

Pathology.—There are two forms, atrophic and hypertrophic. Atrophic cirrhosis is most frequently found in subjects of chronic alcoholism and begins with an excessive heat in the connective tissue of the organ, especially involving Glisson's capsule. The entire organ becomes enlarged as a result. As the connective tissue increases in bulk it contracts, thus compressing the functioning cells and causes their atrophy, and at the same time it effects a marked decrease in the size of the organ. On account of this contraction the vessels passing through the connective tissue are compressed and partially obstructed, producing venous stasis. This is most commonly seen in the portal vein, and because of the stasis which results, the stomach and intestines are congested and have disordered function.

In hypertrophic cirrhosis the connective tissue becomes hypertrophied as in the atrophic form, but there is no inclination toward contraction in this form, hence the liver becomes and remains enlarged. However, in this form the internal connective tissue of the lobules is hypertrophied

and contracts, causing obstruction to the drainage of bile, and, as a result, produces jaundice.

The nerve tracing is as in other affections of the liver.

Symptoms.—Atrophic Form.—The extent of the hypertrophy often reaches its height before any symptoms are manifested, at which time there is portal obstruction with its attending symptoms. The appetite is lost and there are nausea and vomiting. Epistaxis is common, and also hematemesis. The tongue is coated and the breath has an offensive odor, the urine is heavily colored, but there is little or no jaundice. There is often an irregular fever of 100 or 101 degrees, which may be present at times and absent for weeks. There is ascites, which is a common and characteristic symptom of the portal obstruction. The superficial abdominal veins are distended and can be plainly seen upon inspection. There is a dull headache and great emaciation of all parts of the body, which, with the abdominal distention, gives to the patient a peculiar and characteristic posture. There is an adaptative lordosis in the upper lumbar region. The face is pallid, but may have a few distended veins. In the early stages the liver is enlarged, but later atrophies and becomes hard. If the ascites is not too great the lower border of the organ can be palpated, and is found to be hard and firm. The spleen may also be enlarged and hard, and even palpable in some cases. The duration is variable, depending upon the general bodily resistance, which is greater in some individuals than in others. It usually lasts several years.

Hypertrophic cirrhosis is marked by a slight jaundice at the onset, which may become marked before the height of the condition is reached. The liver is evenly enlarged and hard. Upon palpation it is found to reach down to the umbilicus, and may be accompanied by splenic enlargement. There is a dull aching pain in the hepatic region, which is sometimes accompanied by nausea and vomiting. The stools are clay colored and the urine contains bile pig-

ment. There may be slight fever, but there is no ascites nor distention of the superficial abdominal veins. The duration, as a rule, does not exceed two years, and the termination is often sudden, with high and irregular fever.

The proliferation of the connective tissue is a direct result of excessive heat, which is caused by an Li. P. subluxation. Therefore by adjusting the Li. P. subluxation and removing the pressure from the calorific nerves leading to the liver, the normal flow of calorific impulses will be resumed. This being done, the expression of heat in the liver will be normal, further proliferation will be stopped and a process of adaptation will occur, whereby the surplus quantity of connective tissue will be broken down and will undergo disintegration, thus restoring the organ to normal.

FATTY LIVER.

There are two varieties of fatty liver, fatty infiltration and fatty degeneration. Fatty infiltration is an incoordination in the metabolism of the liver, in which there is an excessive deposit of fat among the hepatic cells.

Fatty degeneration is an incoordination of the metabolism of the organ in which the hepatic cells undergo a degenerative change, being transformed into an oily substance.

Adjustment.—Li. P. and K. P.

Pathology.—In fatty infiltration there is simply an excessive accumulation of normal fat upon the connective tissue of the organ, and there is no structural change in the hepatic secreting cells themselves.

In fatty degeneration the individual hepatic cell undergoes a degenerative change, due to improper metabolism. Fatty globules are deposited in the cells and the functionating portion of the cell is transformed into an oily substance, making the organ enlarged and smooth.

The nerve tracing is as in the other forms of hepatic disease.

Symptoms.—Fatty Infiltration.—This may be a part of general obesity, and occurs where there is a marked deficiency in the oxidation of the food in the liver, hence the fatty accumulation. The liver is enlarged, but is painless. It may extend as low as the umbilicus, and upon palpation will feel firm and smooth. The stools may be pale because of undersecretion of the bile.

Fatty Degeneration.—This is a more grave affection and begins with general malaise, headache, anorexia, and sometimes vomiting. After a short duration of the above named symptoms, jaundice will appear and gradually deepens, with clay-colored stools, bile-tinged urine, furred tongue, subcutaneous hemorrhages, and finally cerebral symptoms with the typhoid status, which is followed by death.

AMYLOID LIVER.

Definition.—An incoordination of the liver in which there is a deposit of or a degeneration of the tissue into a substance called amyloid. This amyloid is an albuminoid substance and so named from its resemblance to starch granules.

Adjustment.—Li. P. and K. P.

Pathology.—The liver loses it normal color, becoming pale, and is greatly enlarged. This enlargement is the result of a deposit and the formation of the amyloid material, which first begins in the vessels of the organ and later spreads throughout the parenchyma of the entire liver. Similar changes may be found in the spleen and kidneys, and is common in the tertiary stage of syphilis.

Symptoms.—The onset is gradual, and the liver becomes greatly enlarged. It is smooth, soft and not tender, and can be palpated. The stools are clay colored from suppression of the biliary secretion. The urine is greatly in-

creased in quantity and is found to contain an abundance of albumen and amyloid casts.

The patient becomes emaciated and weak, and there is usually diarrhoea of the bowels. The skin is pale, indicating anemia, and at times may be slightly jaundiced. The duration is variable. This is mainly a nutritional disturbance, and is caused by pressure upon the nutritive nerves emitting from Li. P. and leading to the liver. The decrease of the nutritive impulses causes a perversion of the metabolism of the organ, so that the food brought to it cannot be utilized by the organ in the way that it should be used, but on the contrary, this food is converted into a substance not normally belonging to the body and occupies the room that should be occupied by the newly developing cells.

The proper adjustment will induce normal nutrition and conversion of food products into healthy liver cells.

CARCINOMA OF THE LIVER.

Definition.—A malignant, epithelial tissue growth occurring in the liver and progressively destroying its cells, characterized by emaciation, cachexia and disordered function of the liver.

Adjustment.—Li. P. and K. P.

Pathology.—There are only two organs in which cancer is found with a greater degree of frequency than in the liver. They are the uterus, in which it is most frequently found, and the stomach. Cancer of the liver is usually multiple, but may be single. The new cells accumulate as small nodules in various portions of the superficial vessels and gradually increase in size until the process of degeneration sets in, when they become massive and decay. The hepatic cells atrophy, but the organ is enlarged by the formation of the growths. Colloid degeneration occurs as in the other forms of cancer. The course of tenderness is as in previous disorders of the liver.

Mucal or gelatinous jelly like

Symptoms.—Anorexia of long standing is the first symptom of hepatic cancer and is followed by a sensation of weight and discomfort in the right side, which is increased after eating a medium or hearty meal. Later the patient complains of a dull, aching pain in the right side over the region of the liver, which radiates into the right shoulder. The patient becomes emaciated and weak, and soon jaundice appears, and may be accompanied by the cancerous cachexia, but the cachexia may be hidden if the jaundice is deep. The pain takes on the gnawing character, and the vomiting becomes persistent upon eating. Bile and blood may be vomited, and also passed through the bowels. Upon inspection the abdomen can be seen to be nodular, and the various growths can be palpated, and are of a firm, hard consistency. These symptoms increase in severity, with fever in the late stages, terminating in death within one year.

DISEASES OF THE PANCREAS.

ACUTE PANCREATITIS.

Definition.—An acute inflammation or excessive heat of the pancreas, affecting the parenchyma and interstitial tissue.

Adjustment.—Eighth dorsal in combination with K. P.

Pathology.—There are three forms of the affection, hemorrhagic, suppurative and gangrenous. During the early stages all forms are alike and are characterized by great enlargement and hyperemia of the entire organ, but especially of the interstitial tissue. There is an infiltration of serum in the parenchymatous cells which interferes with the secretion of the pancreatic juice and permits the passage of fat with the stool without any digestion.

In the late stage hemorrhage may occur, filling up the areolar tissue spaces, the lobular ducts and other adjacent tissue.

If suppuration occurs it is called suppurative, and forms small abscesses, formed of the effused blood and degenerating cells.

The gangrenous form is still a later stage, in which the entire affected part of the organ is converted into a soft, offensive-smelling mass or necrosis.

Nerve Tracing.—Tenderness is traceable from the 15th intervertebral foramen on either side following the course of the intercostal spaces to the middle of the epigastric region, where tenderness is diffuse.

Symptoms.—The onset is rather sudden, with severe, deep-seated pain in the upper part of the abdomen. There is soon distention of the epigastric region, and great tenderness is present. The pain extends horizontally across the abdomen and may radiate into the left shoulder in the region of the lower angle of the scapula. There is a slight or moderate temperature, which may begin with a chill shortly after the onset of the pain. There is dyspnoea, cyanosis, hiccough and fatty diarrhoea. The dyspnoea results from the pressure of the diaphragm against the tender and sensitive pancreas, and the fatty stool results from suppression of the pancreatic secretion which digests the fat. Finally the symptoms of collapse may appear, which indicate the occurrence of hemorrhage.

The cardinal symptoms of simple pancreatitis are a sudden deep-seated pain in the epigastric region midway between the ensiform appendix and the umbilicus, vomiting, and finally shock or collapse.

If suppuration takes place there will be a rapid elevation in the temperature and the fever will run an irregular course, with recurring chills, fever and sweats. As soon as either suppuration or gangrene occurs there will also be indicanuria and leucocytosis. The two latter forms are fatal within one or two weeks.

The local eighth dorsal adjustment will restore normal calorific impulses in the substance of the pancreas, and the K. P. adjustment is for the purpose of increasing the normality of the kidneys so the elimination will be at the maximum, and thus rapidly excrete the poisons and toxines that are being absorbed from the affected region.

CHRONIC PANCREATITIS.

Definition.—An incoordination of the pancreas in which there is an over-growth of the interstitial connective tissue, increasing the size and density of the organ and compressing the secreting structure.

Adjustment.—Lower S. P. and possibly K. P.

Pathology.—This begins and progresses slowly, with slight engorgement and swelling of the connective tissue of the pancreas. Upon being subjected to prolonged and excessive heat the connective tissue corpuscles proliferate, thus increasing the bulk of the interstitial substance. The entire organ remains enlarged and hard.

Symptoms.—The degree of tenderness is slight, but follows a course similar to the acute form. There is a dull, aching pain situated deeply in the epigastric region, which may be more or less continuous, but usually paroxysmal. If the pancreas is greatly enlarged the head may press upon the common bile duct and produce jaundice. There will be fatty diarrhoea at times on account of the improper secretion of the pancreatic juice. During the attacks of pain the face has an anxious expression, and there is a feeling of faintness. Slight fever may be present in a few cases, and it is for this that K. P. is adjusted.

HEMORRHAGE OF THE PANCREAS.

Definition.—A condition of the pancreas in which there is a relaxation of the muscular fibres in the walls of the blood vessels, permitting their separation so that the blood may ooze out into the substance of the organ.

Adjustment.—Specifically at lower S. P. 8th dorsal

Pathology.—The lower S. P. subluxation causes pressure upon the motor nerves leading to the minute muscular fibres of the blood vessel walls, causing them to lose their tonicity and to relax to such an extent that they separate and permit the oozing of blood from the vessel into the surrounding tissue.

Symptoms.—The onset is sudden, with sharp, colicky pain in the middle of the epigastric region, accompanied by nausea and vomiting and the symptoms of collapse.

The facial expression is anxious and there is a fear of impending death, the temperature drops to sub-normal, the skin is pale and covered with cool perspiration, the pulse is rapid and feeble, the respirations are hurried and shallow, there is a feeling of suffocation, the abdomen is tender and distended, the apex beat weakens and finally becomes imperceptible; blood may appear at some of the bodily orifices, and death results.

CARCINOMA OF THE PANCREAS.

Definition.—An excessive accumulation of parenchymatous pancreatic cells, in which there is colloid degeneration and a varying amount of suppuration.

Adjustment.—Eighth dorsal in combination with K. P.

Pathology.—This is very rare, and usually affects the head of the pancreas. The growth consists of new epithelial cells situated upon a fibrous stroma. During the early stages there is no decay and rapidly the tumor progresses in size, often pressing upon the duodenum or the common bile duct, and at the same time obstructing the duct of Wirsung. Later the growth becomes the site of colloid degeneration and decay.

Nerve Tracing.—Tenderness is traceable from the 15th intervertebral foramen on the right side and follows a course

along the intercostal spaces to the right half of the epigastric region over the head of the pancreas, which lies in the curve of the duodenum.

Symptoms.—This begins insiduously, with dull, aching pain in the right side in the region of the pancreas. The pain is situated deeply and is subject to excerbations at irregular periods. There is nausea and vomiting and pressure symptoms from the growth against other abdominal organs. From pressure upon the common bile duct there will be jaundice that may make the condition simulate cancer of the liver; pressure upon the pylorus or duodenum may interfere with the working of the pyloric valve and permit the regurgitation of bile into the stomach, and pressure upon abdominal veins will cause venous stasis. There are great emaciation, weakness and the development of cancerous cachexia, with fatty stools.

Palpation may reveal a tumor in this locality, which would confirm the analysis with the above symptoms, providing, however, that symptoms point directly to cancer, if cancer of the stomach, cancer of the transverse colon and aortic aneurism are absent.

PANCREATIC CYST.

Definition.—An abnormal condition in which there is the formation of a large quantity of fluid in the tissue of the pancreas.

Adjustment.—Eighth dorsal. 8th Dorsal

Pathology.—This most commonly occurs when a calculus during its passage becomes lodged in the lower portion of the duct of Wirsung, obstructing the flow of pancreatic juice and causing it to be retained in the gland. In this the duct becomes immensely dilated and the substance of the organ becomes the wall of the cyst. A similar cystic condition might result from obstruction of the duct by a cancer or other growth.

Nerve Tracing.—Tenderness is traceable from the 15th intervertebral foramen on either side to the middle of the epigastric region over the region of the pancreas.

Symptoms.—If the obstruction is the result of impacted calculi there is usually a history of colic, produced by the passage of the calculus to the point where it becomes lodged. This colic is very similar to hepatic colic, except that jaundice is absent and the pain is referred to the left shoulder rather than the right. If the obstruction is from other conditions than calculi the cyst may attain considerable size before any signs are manifest. There is nausea and vomiting, with a steady pain and feeling of abdominal fullness. The epigastric region soon becomes distended and pressure symptoms arise. The pressure symptoms are referrable to the organ pressed upon, and are usually the stomach, liver, spleen and colon. Upon palpation the tumor may be felt, but it is difficult to palpate the pancreas, as it lies so deeply in the abdomen behind the stomach. The stools will contain undigested fat, because of the absence of pancreatic juice in the intestines. If the calculus should pass, the cyst will immediately disappear.

PANCREATIC CALCULI.

Definition.—The crystalization and cohesion of the calcarious elements in the pancreatic juice produced by the action of excessive heat.

Adjustment.—Eighth dorsal.

Pathology.—The local eighth dorsal subluxation causes pressure upon the calorific nerve leading to the pancreas, and produces excessive heat in that organ. The effect of the prolonged heat is such that it produces a crystalization of the mineral elements in the pancreatic juice. The minute crystals adhere to particles of epithelium, or to each other, and form a small grain, which collects other crystals until a rounded, hard calculus is formed. The calculus thus formed may become attached to the membrane lining the

duct wherein it is formed and it may remain there without giving any indications of its existence, but if it passes through the duct the delicate and sensitive mucous membrane is scratched and the symptoms of colic are produced.

Symptoms.—The onset of the pain is sudden, with a feeling of faintness and, possibly, nausea and vomiting. The patient is cramped, the respiration is suppressed, cyanosis may result, the face has an anxious expression, the skin is pale and may be covered with cool perspiration. The pain is agonizing and extends along the left costal margin into the region of the angle of the left scapula to the spine. There are glycosuria and fatty stools, both of which occur because of a lack of the pancreatic secretion.

The adjustment of the causative subluxation at eighth dorsal vertebra will permit the normal transmission of mental impulses to the gland, thereby restoring heat to normal and preventing the further formation of mineral crystals. The secretion will also assume its normal character, and its effect upon the already formed calculus is such as will aid its disintegration.

DISEASES OF THE PERITONEUM.

ACUTE DIFFUSE PERITONITIS.

Definition.—An acute inflammation or excessive heat of the peritoneum, characterized by fever, pain and prostration.

Adjustment.—First or second lumbar, or local with K. P. and C. P.

Pathology.—The lumbar subluxation causes impingement of the calorific nerves distributed to the peritoneum, and this brings about excessive heat or inflammation of the serous membrane. During the early stages there is an hyperemia of the blood vessels and a dryness of the surface of the membrane. Later there is an exudation of a fibrinous

serum from the free surface, which may vary in quantity according to the severity of the inflammation. If slight it may serve as a cementing material, which is conducive to adhesion. When the effusion or exudation is large there is a condition of dropsy of the peritoneal cavity, known as ascites. During the period of absorption the fibrinous portion of the exudate may remain and form adhesions, which will wall off any localized purulent exudation. If the condition is prolonged the effused serum may undergo suppuration and will be transformed into pus. This is called purulent peritonitis.

Nerve Tracing.—There is no specific tracing in case of peritonitis, as the tenderness is so diffuse. Local tenderness may be found near the spine in the region of the causative subluxation.

Symptoms.—Acute peritonitis is manifested by a sudden onset, with a chill and a fever ranging from 102 to 105 degrees. There is intense pain scattered over the entire abdomen, and in order to minimize this pain the thighs are flexed upon the abdomen and the abdominal muscles are retracted. Respiration is of the superior costal type and is very rapid, the pulse is bounding and rapid, the spleen is enlarged and tender, the urine is scanty, highly colored and contains indican, the abdomen is distended by the effused serum, the heart is displaced and the lungs are compressed by the contraction of the diaphragm in the attempt to lessen the pain. The stomach, liver and spleen may be displaced by the effusion and muscular contraction. There is intense thirst and great prostration. Talking, walking and coughing increase the pain, and are accordingly suppressed. There may be vomiting, and, if present, is extremely painful, as the two inflamed layers of the peritoneum are rubbed against each other. The facial expression is anxious, the upper lip is elevated so as to uncover the upper teeth, and is called the Hippocratic countenance; the cheeks are collapsed, the eyes are sunken, the features are pinched, the lips are cyanotic, and the signs of collapse may appear. In

case of collapse the temperature rapidly falls to the normal or sub-normal, the skin becomes cold and clammy, the pulse feeble, the respiration short, sighing and shallow, and death occurs.

By adjusting the local subluxation the inflammation is reduced and the heat restored to normal, the effused serum is absorbed and recovery takes place. The adjustment of C. P. and K. P. is for the purpose of restoring the general bodily heat to normal, and for the elimination of excretory substances.

ACUTE LOCALIZED PERITONITIS.

Definition.—An inflammation or excessive heat confined to a local part of the peritoneum.

Adjustment.—Local, depending upon the part of the peritoneum involved, in combination with C. P. and K. P. If the local inflammation is in the region of the vermiform appendix or ovary, the local adjustment should be made at second or third lumbar vertebra. If it is a subphrenic peritonitis the local adjustment will be from the fourth to the eighth dorsal vertebrae, as will be determined by palpation and nerve tracing, the tracing being very distinct from the cause to the region over the inflamed part.

Pathology.—Acute localized peritonitis is usually associated with an inflammation of some other abdominal organ, such as the appendix, ovary, uterus or liver, and the changes noted are the same as in the diffuse form. There is an early hyperemia and swelling of the peritoneum in the circumscribed area affected. The free surface becomes dry and red, and is very painful when brought in contact with another surface. From this dry surface an exudate which is rich in fibrin soon appears and may become very profuse in quantity, producing a local dropsy in that part of the abdomen. Later, during the stage of absorption, the fluid part of the effusion is readily absorbed, but the fibrinous part remains, forming a cementing substance which is a material factor in the production of adhesions.

Symptoms.—The symptoms are about the same as the acute diffuse form, except that they are localized in a specific part of the abdomen. This begins suddenly, with a slight chill or chilliness, and is followed by a rapid rise in the bodily temperature to 102 or 103 degrees. There is a moderately severe pain in the abdomen, which is increased upon motion, deep breathing, coughing or vomiting. The bowels are constipated, the urine is scanty and highly colored, and may contain indican. The tongue is coated and there is an offensive odor with the breath. In order that the pain in the abdomen may be minimized, the thighs are flexed upon the abdomen, the abdominal muscles are retracted, the patient lies upon the back, and the respirations are short, shallow and of the superior costal type. If the localized peritonitis is localized on one side the patient may lie upon the affected side, and the retraction of the abdominal muscles will be limited to the side affected. There is marked local tenderness over the region affected and there may be distention of the abdomen at that point. Although painful, vomiting does occur, and the vomitus contains bile which is sometimes blood stained.

In case of subphrenic peritonitis the effusion may displace the liver, pancreas, stomach or spleen, as can be determined by palpation and percussion. The diaphragm will be contracted to lessen the pain, and, as a result, the apex beat of the heart may be displaced and the lungs will be compressed, making oxygenation low and possibly producing cyanosis. There are friction sounds produced by the rubbing of the two inflamed layers of the peritoneum. If absorption does not take place in a sufficient length of time suppuration will occur, producing a condition of empyema of the peritoneum. This is marked by repeated chilliness, a high and irregular fever, with profuse sweats, great prostration, and, finally, cerebral symptoms of delirium, stupor and coma.

Many cases of localized peritonitis have come within my observation that have entirely recovered from the attack under specific Chiropractic adjustments. The adjustment

relieves the pressure on the calorific nerves, permitting a restoration of the normal heat, whereby the hyperemia and swelling subside and the painful symptoms disappear.

CHRONIC PERITONITIS.

Definition.—A slight and prolonged inflammation of the peritoneum, in which it becomes greatly thickened and indurated. This may be either localized or diffuse, as in the acute form.

Adjustment.—K. P. and local, according to the part of the peritoneum affected, and if diffuse the local subluxation is in the upper lumbar region.

Pathology.—This may be a prolongation or continuation of an acute attack, but more commonly it is either tubercular or cancerous, with adhesions and proliferation of its connective tissue elements. In the early stages there are hyperemia, swelling, exudation and often adhesions. At a later period there is a proliferation of the connective tissue corpuscles, which results in a thickening of the peritoneum involved. After this proliferation takes place adhesions will form, matting the intestines and folds of peritoneum together, thus disturbing the relation of the abdominal viscera. There may be sacculated portions of the peritoneum containing serum which has been effused, and which may still, in the chronic stage, undergo suppuration.

The nerve tracing is as in the previous forms.

Symptoms.—When localized there are practically always adhesions of some of the abdominal viscera, especially the veriform appendix and its part of the mesentery, the liver, spleen and other pelvic organs. It may be possible to recognize and locate the adhesions upon inspection, as that part of the abdomen is often drawn inward, and upon palpation feels like a band or cord. The adhesions may compress the intestines and effect obstructive constipation, and there is more or less coliky abdominal pain. When the inflamma-

tion is diffuse it is more commonly tubercular, and found in a patient having a tubercular diathesis. The patient is thin and may be continually losing flesh and strength, there is abdominal discomfort which at times amounts to pain, either dull and aching or sharp and coliky; there is usually constipation, but in a few cases there is diarrhoea; there is a daily afternoon rise in the bodily temperature and may be accompanied by night sweats. Tubercular nodules may be palpable upon abdominal palpation, and these nodules may coalesce so as to form large tumor-like masses that will press upon the abdominal organs and give rise to pressure symptoms from those pressed upon.

If there is a tubercular inflammation it may be extended to the intestines and other abdominal viscera. Small tubercular masses may form and coalesce in the intestinal tract, and will produce the symptoms of intestinal obstruction, with fecal vomiting and great prostration. This complication is not common.

CARCINOMA OF THE PERITONEUM.

Definition.—A malignant epithelial tissue growth in which there is colloid degeneration and decay.

Adjustment.—Local in combination with K. P.

Pathology.—As in other cases of carcinoma, this begins as a simple tumor, being composed of epithelial cells situated upon a fibrous stroma. However, as the growth increases in size the degeneration begins, and is carried on at a very rapid rate, in comparison with other degenerations. The cells first formed are first affected by the degeneration and soon are in a state of necrosis. Portions of the tumor slough off with the pus, and as it enters the intestine, may be found in the stool. The growth continues to expand from below and may spread in area, there frequently being the formation of many more growths toward the end.

Nerve Tracing.—Tenderness is traceable from the region of the local subluxation outward, around the side to the region over the tumor, and may become diffuse at this point.

Symptoms.—So long as the growth is small and no pressure symptoms are present the patient may be ignorant of any effect. As soon as it attains sufficient size pressure symptoms will be manifest. Among these are ascites from pressure upon veins, constipation from pressure upon the intestines, gastric irritability from pressure upon the stomach, and feeble pulse in the femoral artery from pressure upon that artery.

There is a dull, aching, burning, itching, or gnawing pain felt in the region of the growth which may be palpable. The patient loses flesh and strength progressively, and the skin becomes dark because of the development of the cancerous cachexia. The cardinal symptoms are the progressive loss of flesh and strength, the dull, gnawing pain, the cancerous cachexia, the palpable tumor, and pus in the stool.

ASCITES.

Definition.—An abnormal collection of fluid in the peritoneal cavity, characterized by distention of the abdomen and displacement of the abdominal viscera.

Adjustment.—The adjustment always includes K. P., but, in addition, requires a local adjustment, and this local adjustment may be very variable, depending upon the condition which produced the ascites. This may occur in connection with valvular trouble of the heart, in which case H. P. is local, or it may occur in portal over-distention, in which event Li. P. is local, or it may occur in nephritis, in which case K. P. is specific.

Pathology.—There is a collection of fluid in the peritoneal cavity and an infiltration of serum into the surrounding and adjacent tissues. This serum is transparent and of a straw color, having a specific gravity of about 1.015 and is rich

in albumin and fibrin. Since the ascites may result from a variety of pathological conditions, they have been described elsewhere and the ascites considered but as a symptom.

Symptoms.—The onset is slow and gradual, regardless from what condition the dropsy arises. The first indication is a swelling of the abdomen, but in nephritis a puffiness of the face is first seen, and in cardiac dropsy edema of the ankles is first seen. The abdomen is distended and the skin is shiny. There is scanty urination, constipation, difficult respiration from the upward pressure of the diaphragm. The abdomen becomes distended, and in order to maintain the center of equilibrium in a perpendicular manner the shoulders are thrown back and an adaptative lordosis results in the upper lumbar region. The skin may pit upon pressure, and the shape of the abdomen will change with prolonged change in the position of the patient.

RETROPERITONEAL SARCOMA.

Definition.—An abnormal, excessive growth of connective tissue cells in which there is progressive degeneration and decay.

Adjustment.—Local in combination with K. P.

Pathology.—This growth differs from a carcinoma, in that it is not situated upon a stroma, does not have any lymphatics and is composed of connective tissue cells. These multiply at a rapid rate and form an enormous tumor. The cells, which are early formed, begin to undergo a form of decay, which results in cachexia and later death.

Nerve Tracing.—There is tenderness leading from the local subluxation, which is usually in the lumbar region of the spine, outward around the trunk to the region over the growth.

Symptoms.—This tumor may attain a very large size without giving rise to any symptoms if it lies to one side of the median line in the back part of the abdomen. The first

symptoms to appear are those resulting from the pressure of the tumor upon some abdominal viscus. There is anorexia, nausea and vomiting, with constipation and coliky or dull and aching pain from the beginning of the symptoms. The weight of the tumor produces a sensation of pressure or bearing down in the abdomen, which increases until it becomes a pain of a dull, dragging character. There may be intestinal obstruction from pressure upon the intestines, weak pulse in the femoral artery from pressure upon the aorta, edema of the lower extremities from pressure upon the inferior vena cave, and because of its immense weight, it may aid in a general splanchnoptosis. There is loss of weight and strength, cancerous cachexia appears, and upon abdominal palpation the tumor may be felt lying deeply in the back part of the abdomen. The tumor may fluctuate and move with respiration, but is ordinarily firm and solid, being fastened to the muscles of the spine.

SECTION V.

DISEASES OF THE RESPIRATORY SYSTEM.

ACUTE NASAL CATARRH.

Definition.—Acute nasal catarrh, also known as coryza, is an acute inflammation of the mucous membrane lining the nose and the cavities communicating with it, characterized by disorders of smell and an abnormal mucous discharge.

Adjustment.—Middle cervical, usually the fourth. There is improper elimination of bodily poisons in all catarrhal inflammations, and therefore K. P. and upper lumbar should also be adjusted.

Pathology.—The mucous membrane becomes swollen and its vessels are hyperaemic, which gives to it a reddish color. The normal secretion is diminished, but there is a flow of a colorless salty fluid, which later becomes mucoid or mucopurulent. The swelling is due to infiltration of serum into the structure of the membrane, therefore is edematous in character. The exudation may vary greatly in quantity and becomes more profuse as the swelling subsides.

Nerve Tracing.—Tenderness is traceable from the fourth intervertebral foramen on either side outward over the neck, upward over the angle of the jaw, in front of the ear and forward to the region of the nose.

Symptoms.—Acute catarrh is commonly spoken of as a cold in the head, and begins with chilliness along the back, headache, and general lassitude. There may be a slight fever (101), sneezing and a feeling of dryness in the nostrils, so that the patient feels more comfortable when breath-

ing through the mouth. At first there is a thin acrid secretion from the nose, watering of the eyes, and impairment of the senses of smell and taste. The inflammation may soon extend downward, affecting the pharynx, making it red and swollen.

The throat is then sore, the neck may become stiff, the cervical glands may be swollen; there is usually herpes of the nose and lips. If the larynx becomes affected there will be dysphonia or hoarseness, and cough may be present. There may be partial deafness, owing to the swelling of the mucous membrane at the opening of the eustachian tube. In three to five days the secretion becomes muco-purulent and is of a yellowish color, which may subside by the tenth day or merge into the chronic form, with the formation of hard crusts.

CHRONIC NASAL CATARRH.

Definition.—Chronic rhinitis is a chronic catarrhal inflammation of the nasal mucosa, characterized by structural changes in the membrane and derangement of the sense of smell.

M.C. – K.P. – V.L.

Adjustment.—Same as the acute form.

Pathology.—At the onset the pathology is that of the acute form, but in the later stages it takes on the form of either hypertrophic rhinitis or atrophic rhinitis.

In the hypertrophic form the membrane of the nasal passages becomes thickened, dark red in color, and there is engorgement of the blood vessels. One or both of the passages may become closed and the sense of smell abolished.

In atrophic rhinitis the nasal cavities become enlarged because of the atrophy of the mucous membrane. Frequently there are ulcerations on the membrane, from which there exudes an offensive or fetid discharge. The secretion is thick and forms into hard, dry green crusts.

Symptoms.—The mucous membrane readily becomes congested and the patient constantly has a cold in the head. There is more or less constant sniffling. The air passages may be partially or completely closed, and mouth breathing is the result. There is the nasal pharynx. The voice becomes nasal, and there may be varying degrees of deafness and the formation of adenoid growths in the nose and pharynx. Ozena is a common symptom of the atrophic form, and sometimes this form is called ozena. Under the adjustments the secretion becomes more profuse and muco-purulent at first, later becoming mucous and diminishing in quantity until normal. The time required for this is variable, depending upon the extent of the depletion of the membrane.

HAY FEVER.

Definition.—It is an acute inflammation or excessive heat of the mucous membranes lining the upper respiratory passages, characterized by a thin, watery discharge from the nose, difficult respiration and sneezing.

Adjustment.—The fourth cervical vertebra is the usual adjustment, but in cases where the inflammation extends down into the bronchi, the seventh cervical or first dorsal should be adjusted.

Pathology.—The nasal mucous membrane is swollen and congested and from it exudes a thin acrid secretion. The membrane is also excessively sensitive.

Symptoms.—Hay fever is also known as hay asthma, rose cold, and autumnal catarrh. The disease makes its appearance in attacks which usually come on during the late summer, with sneezing, irritability of the eyes and difficult breathing. There is a profuse watery discharge from the nose, the eyes are watery and red with itching lids. The special senses of taste, smell and hearing may be greatly impaired.

When the larynx and bronchi are affected there is cough and expectoration, with severe attacks of dyspnoea. Generally constitutional symptoms are absent, but there may be anorexia, general weakness and a slight fever.

DISEASES OF THE LARYNX.

ACUTE CATARRHAL LARYNGITIS.

Definition.—It is an acute inflammation of the mucous membrane lining the larynx, characterized by slight fever, hoarseness, and a catarrhal exudate.

Adjustment.—Lower cervical in combination with S. P.

Pathology.—The membrane of the larynx becomes swollen, hyperaemic, and the normal secretion greatly diminished. The vocal cords may become swollen and lose their power of vibration, which produces aphonia.

Nerve Tracing.—Tenderness traceable from the sixth or seventh intervertebral foramen, on one or both sides, outward and forward to the region over the larynx.

Symptoms.—The onset is sudden, with a tickling in the throat, which produces a cough. The cough is dry and hoarse, or metallic. The voice becomes husky and may be completely lost, the patient speaking in whispering tones. There is dysphagia, dyspnoea and tenderness of the larynx. The respirations are short and shallow. The vocal cords are thickened and lack vibratory power. The cough is dry at first, but later is accompanied with a mucous or mucopurulent expectoration.

SPASMODIC LARYNGITIS.

Definition.—A catarrhal inflammation of the mucous membrane of the larynx, associated with a temporary spasmodic contraction of the glottis.

Adjustment.—Sixth cervical in combination with S. P.

Pathology.—Same as acute laryngitis, with a sudden contraction of the glottis.

Nerve Tracing.—The nerve tracing is the same in all cases of laryngeal disorders.

Symptoms.—This disease is also known as spasmodic croup, catarrhal croup and false croup.

The attacks are nocturnal in character and begin suddenly without any premonitory symptoms. The child awakens with a sense of suffocation, a dry, harsh, croupy cough and intense dyspnoea. The coughing occurs in paroxysms, during which time the face is cyanotic and may be covered with perspiration. After a few paroxysms the dyspnoea is partially relieved and the child recovers within a few hours. The attacks are recurrent nightly for three or more nights, each succeeding attack being milder than the one preceding it. An adjustment during an attack produces immediate relief, and usually prevents subsequent attacks.

CHRONIC LARYNGITIS. LOWER CERV S. P

Definition.—A continuation or prolongation of the acute form.

Adjustment.—See acute catarrhal laryngitis.

Pathology.—The swelling and redness of the acute form remains present in the chronic. In addition, the mucous membrane becomes hypertrophied and the vocal cords relaxed.

Symptoms.—The most constant symptom is hoarseness, or huskiness of the voice, which may be intensified upon the contraction of a slight cold. There is a chronic laryngeal cough with or without expectoration. Constant irritation or tickling in the throat is a prominent sign of chronic laryngitis.

The above condition and symptoms being produced by a lower cervical subluxation impinging nerves which have to do with the expression of the calorific function, restoration can be brought about only by proper adjustment of this subluxation. Under adjustments the cough becomes loose and the expectoration more plentiful as the chronic excessive heat lessens, and at first the patient may think he has a fresh "cold." Later the exudate diminishes, the voice changes back to the normal, as the swelling of the cords is subsiding, and finally all symptoms disappear.

EDEMA OF THE LARYNX.

Definition.—An incoordination of the larynx in which there is an infiltration of serum in the sub-mucous and areolar tissue of the glottis.

Adjustment.—Lower cervical in combination with S. P.

Pathology.—There is usually some inflammation of the vocal cords and laryngeal membrane, with redness and congestion. The loose connective tissue becomes infiltrated with serum, decreasing the size of the lumen of the larynx and diminishing vibratory power of the cords.

Symptoms.—This usually begins with sore throat and cough, similar to acute laryngitis, followed by a feeling of fullness in the throat and difficulty in breathing, which progressively increases in severity. The voice sounds muffled and gradually becomes weaker as the edema increases. The cough diminishes as the attack progresses, and is accompanied by expectoration. Soon the patient becomes cyanosed; he assumes the erect position so as to lend support to the accessory respiratory muscles. The face has an anxious expression and the individual fears suffocation. Often the analysis is made by laryngoscopic examination.

LARYNGISMUS STRIDULUS.

Definition.—A spasm of the muscles of the larynx, characterized by a sudden development of dyspnoea and lack of oxygenation of the blood.

Adjustment.—Since the muscles affected in this disease are supplied by the inferior laryngeal nerve, the principal adjustment is at S. P., but lower cervical may be included.

Pathology.—There is no structural change in this incoordination, but during the attack the muscles supplied by the inferior laryngeal nerve are in a contractured state.

Symptoms.—This is also called child-crowing; thymic asthma, and spasm of the glottis. It most frequently occurs in children, but may occur in adults, and makes its appearance during the night when the child suddenly awakens with a sense of suffocation, a croupy cough and great dyspnoea. The breathing ceases, the face becomes congested and cyanotic, and all of the accessory muscles of respiration are brought into play. Finally there may be slight cough, whereupon the spasm ceases and the dyspnoea and cyanosis disappear. Often the spasm terminates with a high-pitched crowing inspiration. The attack may be accompanied with convulsions in children. The duration of the entire attack is less than an hour, and there may be several attacks in succession, but death rarely, if ever, occurs.

TUBERCULOSIS OF THE LARYNX.

Definition.—This is also known as tuberculous laryngitis, laryngeal phthisis and consumption of the throat. It is a tubercular inflammation of the larynx, characterized by ulceration, general weakness and emaciation.

Adjustment.—Lower cervical, S. P. and K. P.

Pathology.—At first the mucous membrane may be excessively red and contain but few tubercles. Later the tubercles increase in number and coalesce, forming nodules which may undergo ulceration. For description of tubercles, see tuberculosis.

Symptoms.—The symptoms of chronic laryngitis may be present long before the condition is suspected as being

tubercular. The cough is accompanied by a profuse viscid expectoration, which at times may be blood stained. The voice becomes husky and there may be a complete aphonia, the patient speaking in a whisper. Swallowing is painful, and there may be dyspnoea.

The mucous membrane becomes pale, the nodules ulcerate, and the general health is greatly impaired. The patient becomes emaciated and the tubercular cachexia develops. The tubercles may form upon the mucous membrane of the bronchi, pharynx and nose, which increases the severity of the symptoms and the exudate, which is extremely annoying to the patient. Fever of the remittent type is present, as also are night sweats, so common to tuberculosis. Examination of the larynx with the laryngoscope reveals the tubercular condition with its ulcerations.

It is necessary to differentiate tubercular laryngitis from syphilitic laryngitis. In syphilis the pain is slight or absent, the ulceration progresses rapidly and affects the laryngeal cartilages as well as the membranes; the general health is but slightly impaired, and there is the history of syphilis.

DISEASES OF THE BRONCHI.

ACUTE BRONCHITIS.

Definition.—An acute catarrhal inflammation of the bronchial mucosa, is usually bilateral, and affects the first and second divisions of the tubes. It is also commonly spoken of as a "cold on the chest."

Adjustment.—Bronchitis is usually caused by a subluxation of the first dorsal vertebra, may be seventh cervical or second dorsal. The adjustment should include K. P. also.

Pathology.—The first dorsal subluxation produces pressure upon the nerves having to do with the calorific function, and so interferes with its expression that excessive heat or inflammation results. The mucous membrane lining

the tubes becomes swollen and its blood vessels become hyperaemic, giving to the membrane an excessive redness. From the congested mucous membrane there is an exudation of a catarrhal mucus, which at first is clear, but later becomes muco-purulent. This exudate is plentiful in the latter stages and may be blood streaked from capillary hemorrhage.

Nerve Tracing.—The course of the tender nerves may be followed from the eighth or ninth intervertebral foramen, on one or both sides, over the border of the trapezius muscle, beneath the clavicle, becoming diffuse over the area of the tubes affected.

Symptoms.—Acute bronchitis may be preceded by or accompanied with coryza. There is slight chilliness and fever (100 to 101 degrees). The throat becomes sore, and there is slight hoarseness, with a sense of constriction in the chest, and substernal pain. The skin over and on either side of the sternum is tender upon palpation. The cough is of the characteristic bronchial type and at first is dry, but later becomes loose, and is accompanied with profuse expectoration. The expectoration gradually changes from a thick, clear mucus, as present during the early stages, to a yellowish muco-purulent exudate, which is present during the terminal stages. Large, moist, mucous rales are prominent over the bronchial area. The respiration is accelerated, shallow, and the breathing sounds are harsh. If the condition is intensified and extended into the terminal bronchioles, pneumonia is the result.

CHRONIC BRONCHITIS.

Definition.—A chronic inflammation of the bronchial mucosa, characterized by dyspnoea, cough and expectoration.

Adjustment.—See acute bronchitis.

Nerve Tracing.—See acute bronchitis.

Pathology.—There is swelling of the mucous membrane, congestion of its vessels and exudation from its follicles, as in the acute form, but in addition to this the mucous membrane is thickened, rough and in-elastic, and the lumen is greatly diminished in size. The elastic and muscular coats are also hypertrophied, may contain circumscribed dilatations and the cartilages contain calcareous deposits.

Symptoms.—Two varities of chronic bronchitis are recognized—dry catarrh, or that with the dry, hacking cough, which is usually associated with chronic laryngitis, and pharyngitis. The cough occurs more or less continuously and is accompanied with expectoration of small globular masses of viscid mucus. Moist catarrh is accompanied with profuse expectoration, paroxysmal cough, most marked in the morning, and large, moist, mucous rales. This variety is most pronounced during the winter months. The digestion may be disturbed, the breath has a foul odor, the tongue is coated, breathing is labored, and the patient may be emaciated. The dry variety is marked by a tightness in the chest, substernal soreness and hoarseness upon over-use of the voice. There may be costal soreness from the persistent coughing. It is necessary to distinguish chronic bronchitis from chronic tuberculosis, as the latter begins with a dry bronchial cough. In bronchitis the tubes leading to both lungs are generally affected and there is absence of the failure of the general health. Chronic phthisis is usually unilateral, there is progressive emaciation, hectic fever, weakness, night sweats and development of the tuberculous cachexia. The physical signs of tuberculosis are also localized. Vertebral palpation and nerve tracing will assist in determining the exact location of the trouble, after which its character is readily recognized.

BRONCHIECTASIS.

Definition.—A form of chronic bronchitis in which there is the formation of saccules in the bronchial tubes, filled with

a putrid secretion. This may be unilateral or bilateral, and may involve one or many of the tubes.

Adjustment.—Upper dorsal, usually first or second, in combination with K. P.

Pathology.—The impingement produced by the vertebral subluxation in the upper dorsal region interferes with the transmission of both motor and calorific impulses, thus not only producing an inflammation of the mucous membrane, but also producing a loss of the muscular tonicity in the muscular fibres of the bronchial muscles, causing them to dilate, thus forming the saccules. The saccules contain a purulent exudate, which exudes from the mucous membrane and is expectorated periodically.

Symptoms.—Bronchiectasis is always preceded by chronic bronchitis; in fact, it is a form of chronic bronchitis where the secretion becomes purulent. There is cough occurring in paroxysms during the morning. During sleep, when the individual is in the recumbent posture, the secretion accumulates in the saccules; when the position or posture is changed in the morning the sac overflows; the purulent secretion coming in contact with the healthy mucous membrane below, irritates it, so that cough and profuse expectoration results. The amount of expectoration depends upon the number and size of the saccules. After the sacs are emptied there is a period of rest until they again fill. Upon standing the expectorate separates into three layers. The upper layer consists of a brownish froth, beneath which is a thin, yellowish mucoid layer, and in the bottom there is a deposit of sediment containing pus, mucus and destroyed epithelium. If suppuration is extensive the odor is very offensive. If the dilatations are very small the symptoms of chronic bronchitis will supervene. Rales are common, and there may be small hemorrhages.

Bronchiectasis may simulate tuberculosis, in that the signs of a cavity may exist in both, but in tuberculosis the regular hectic fever, progressive emaciation and debility;

tubercular cachexia and microscopic examination of the sputa will indicate the former.

FIBRINOUS BRONCHITIS.

Definition.—A plastic inflammation of the mucous membrane lining the bronchial tubes, accompanied by the formation and expulsion of fibrinous casts. This is also known as plastic bronchitis and membranous bronchitis.

Adjustment.—First dorsal with K. P.

Pathology.—The mucous membrane becomes hyperaemic and swollen early in the affection. Later there is an exudation of grayish-white mucus, which contains much fibrin, from the follicles of the tubes. This exudate forms a pseudo-membrane which takes on the form and shape of the bronchi in which it is formed. It finally becomes detached from the mucous membrane by the process of suppuration occurring beneath the false membrane, and is expectorated as small mucous pellets. If these pellets be placed in water they can be unravelled with needles and found to be casts of the bronchi, usually of a secondary or tertiary bronchus. If the casts are placed in acid they swell and are similar in appearance to boiled macaroni.

Symptoms.—Occasionally the onset is sudden, with chills and high fever, which is followed by intense dyspnoea, violent paroxysms of cough, and, possibly, hemoptysis. Usually, however, the onset is that of ordinary bronchitis, with slight fever, a paroxysmal cough increasing in violence, cyanosis, and finally blood-stained expectoration. The expectoration contains shreds of false membrane in the form of casts, which characterize the disease. After the expulsion of these casts the dyspnoea is relieved and the cyanosis disappears, but returns when the tubules are again filled with the fibrinous formation. The respiration is weak, vocal fremitus is diminished, and there is deficient expansion of the affected side. The analysis depends upon finding of the casts in the expectorate.

BRONCHIAL OBSTRUCTION.

Definition.—A decrease in the size of the bronchial tube or a total closure of its opening, brought about by a growth, constriction, or pressure from without.

Adjustment.—Local, depending upon the condition producing the obstruction. Usually upper dorsal region.

Pathology.—This may be variable. Tumorous growths may form in the tube and produce obstruction. Foreign bodies, or thickening of the lining of the tube, pressure upon the tube by a mediastinal tumor, or pulmonary tumor, or pressure by a thoracic aneurism. When the obstruction is produced by a contraction of the inner bronchial muscles the condition is known as bronchial asthma.

Symptoms.—This is usually unilateral, and when the smaller bronchi are obstructed there may be no noticeable symptoms, but if a large bronchus is obstructed there is intense dyspnoea, with retraction of the upper abdominal muscles and intercostal muscles during inspiration. Deficient expansion of the affected side. There may be a slight upward movement of the larynx during expiration if a large bronchus is affected, but the extent of this movement is much less than in laryngeal stenosis. The vocal fremitus is diminished, dry rales may be present at the point of obstruction, and if atelectasis occurs there will be dullness upon percussion. Imperfect Expansion of Lungs

BRONCHIAL ASTHMA.

Definition.—A chronic affection of the bronchi, characterized by great difficulty in breathing, recurring at intervals, accompanied by wheezing sounds, a sense of constriction in the chest, and sometimes cough and expectoration.

Adjustment.—The cause of bronchial asthma is a subluxation of the first dorsal vertebra, producing pressure upon the nerves of the eighth or ninth zone leading to the bronchi. The adjustment would also include K. P.

Pathology.—There is hyperaemia and swelling of the bronchial mucosa and an exudation of mucin, together with a spasmodic contraction of the inner bronchial muscles, occurring when the lungs are filled, and producing an expiratory dyspnoea.

The impingement interferes with the transmission and expression of two functions, viz.: Motor, producing the muscular contraction, and calorific, bringing about the hyperaemia and swelling.

Adjustment of the subluxated vertebrae producing the impingement permits normal transmission and expression of mental impulses, therefore normal function in the bronchial tubes.

Symptoms.—There may be premonitory symptoms, as chills, depression of spirits, vertigo, bronchial irritation, thoracic oppression, or what is commonly called nervousness.

Nocturnal attacks of sudden onset are more common. After a few hours sleep the patient awakens with a distressed feeling of lack of breath, and a feeling of great oppression in the chest. He assumes an upright position, bracing the arms so as to give additional support to the accessory muscles of respiration. The respiratory efforts become violent in the attempt to overcome the intense dyspnoea. The face is pale and the facial expression is extremely anxious, the patient fearing suffocation. The breathing is accompanied by wheezing sounds, speech becomes impossible, and the face is soon cyanosed. This is an expiratory dyspnoea, for the air entering the lungs is prevented from escaping by a contraction of the smaller bronchi. Very little air enters the lungs, the muscles of respiration are contracted, the eyes protrude, and the chest is barrel shaped. This paroxysm of intense dyspnoea may last from a few minutes to several hours, and frequently subsides with a cough and slight expectoration of a thin, watery fluid. The pulse is very rapid and small, the face is covered with

perspiration, and upon the expiration of the attack the patient falls into a sleep from the extreme exhaustion. Microscopic examination of the sputa shows the presence of Leyden's crystals and Curschmann's spirals. The attacks may recur several times in rapid succession, or a single attack may last for days, with remissions or intermissions of hours. Later the expectoration becomes muco-purulent, and the crystals and spirals disappear.

Patients suffering with this incoordination usually have an asthmatic hump, or marked prominence of the lower cervical and upper dorsal vertebrae. Their breathing is peculiar, in that the inspirations are short and the expirations are prolonged. They frequently have the barrel-shaped or emphysematous chest, and prominent sterno-mastoid muscles. It is very rare that the patient dies during an attack, unless there are complications existing, especially cardiac trouble.

DISEASES OF THE LUNGS.

3rd dorsal

PULMONARY CONGESTION.

Definition.—An incoordination in which there is an excessive accumulation of blood in the blood vessels of the lungs.

Cause.—This is caused by a subluxation of the third dorsal vertebra impinging the motor nerves leading to the muscular fibres forming the walls of the blood vessels in the lungs, thus causing them to become relaxed, dilated and engorged with blood.

Pathology.—The vessels are engorged. The lung tissue has a bloated and dark red appearance. There is a frothy exudation from the mucous membrane, and the lung sinks deeper in water than the normal lung.

Nerve Tracing.—The course of tenderness leads from the tenth intervertebral foramen on either side outward over or

under the scapula, under the axilla, becoming diffuse over the lungs.

Symptoms.—There are two forms of pulmonary congestion recognized—active congestion and passive congestion.

Active congestion is usually arterial, and may have remissions in its intensity. It also precedes inflammatory conditions of the lungs, and is characterized by heavy, labored breathing, soon amounting to dyspnoea; a flushed face, strong, full, bounding pulse, and a short, dry cough that may be accompanied by blood-stained, frothy expectoration. There may be a general fever, with the appearance of symptoms of other co-existing conditions.

Passive congestion usually results in cases of mitral stenosis or incompetency, which will interfere with the return of blood from the lungs, and when such is the case it is called mechanical. It usually develops slowly, with difficulty in breathing upon slight exertion, cough and frothy expectoration, becoming blood-stained if the congestion is severe. Cardiac symptoms would correspond to the valvular lesion producing the congestion.

If the over-fullness of the vessels is favored by the position assumed by the patient, it is termed hypostatic congestion. This kind of congestion is encountered in the acute febrile diseases. The symptoms of this type are similar to the passive type, except that the cardiac symptoms are lacking.

PULMONARY EDEMA.

Definition.—An abnormal condition in which there is an accumulation of serum in the interstitial tissue of the lungs.

Adjustment.—Third dorsal and K. P., if general dropsy co-exists.

Pathology.—There is swelling or thickening of the lung tissue from the accumulated serum, making the lung inelastic.

The lung tissue will pit upon pressure, and will sink in water deeper than the normal tissue. If cut, a serous fluid exudes. If there is associated congestion the capillaries are engorged, and the escaping serum will be blood-streaked.

Symptoms.—If the edema occurs from nephritis the pulmonary symptoms will be of gradual onset and the dyspnoea more pronounced when in a recumbent posture. When purely a local effect the onset is sudden, with dyspnoea, cyanosis, cough, and frothy, perhaps blood-stained, expectoration. The compression of this interstitial swelling is upon the pulmonary vessels, and offers great resistance to the pulmonary circulation, thus throwing added work upon the right ventricle, effecting hypertrophy. Should dilatation exceed the hypertrophy the symptoms of collapse or shock will supervene, the patient sinking into a stupor. It is frequently difficult to distinguish this from pulmonary congestion, and the two may co-exist in the same individual. It may simulate acute pneumonia in the early stages, but the high fever with local areas of consolidation will serve to differentiate them.

BRONCHO-PULMONARY HEMORRHAGE.

Definition.—A hemorrhage or oozing of blood from the vessels of the lungs or bronchi. This condition is otherwise known as bronchorrhagia, or hemoptysis.

Adjustment.—Upper dorsal region, as will be determined by vertebral palpation.

Pathology.—The mucous membrane is usually hyperaemic. The minute muscular fibres forming the vessel walls are relaxed and slightly separated, so that the blood oozes from them. The bronchi may be filled with clotted blood. Hemorrhages may occur from tuberculous destruction of the vessel wall, or erosion of the vessel from other diseases.

Symptoms.—The amount may be small and continue for days, or there may be a rupture of a vessel large enough to

produce immediate death, with the symptoms of internal hemorrhage. The hemorrhage may begin with a tickling sensation in the larynx, which will induce coughing. The cough will be accompanied with a flow of warm, salty blood in the mouth. The breathing may be difficult, with a sense of constriction in the chest. The blood is of a bright red color, which distinguishes it from hematemesis. After the hemorrhage the patient may be weak, pale, feverish, and have fear of a future hemorrhage with fatal results. As a rule, however, death does not occur from broncho-pulmonary hemorrhage.

If the effused blood remains in the air sacs, signs of consolidation will be present, but this blood is usually removed by expectoration or absorption. The sputa may be slightly blood-stained for days following the hemorrhage. Severe hemorrhages have been instantly stopped by a single Chiropractic adjustment.

EMBOLISM AND THROMBOSIS.

Definition.—Embolism is an obstruction of a blood vessel, which is carried to the point of obstruction by the blood stream. Emboli most frequently consists of destroyed epithelium or endothelium from the valves of the heart following an attack of endocarditis; or a clot containing pus cells, epithelial cells and blood cells; or portions of broken off thrombi.

Thrombosis is an obstruction of a blood vessel which forms in situe. It consists of a local and irregular thickening of the tunica intima, and is commonly encountered in arteriosclerosis.

Adjustment.—Upper dorsal, as determined by vertebral palpation.

Symptoms.—Embolism always occurs in the arteries, and thrombosis may occur in either arteries or veins. The obstruction may vary greatly in size. If obstructing a small

vessel no noticeable symptoms may occur, and if obstructing a very large vessel instant death may result.

If a medium-sized vessel is obstructed there will be cough, dyspnoea, cyanosis, blood-streaked expectoration, and, possibly, hemoptysis. There is extreme mental anxiety, depression of spirits, syncope, and, possibly, coma or convulsions. Fainting

Pain may or may not be present at the point of the obstruction. Other symptoms of congestion will be present, as there is interference with the pulmonary circulation and a forcing back of the blood.

BRONCHO-PNEUMONIA.

Definition.—An acute inflammation of the mucous membrane lining the terminal bronchial tubes and their communicating air cells, with consolidation of the cells affected.

This is also known as bilateral pneumonia, suffocative catarrh, catarrhal pneumonia, capillary bronchitis, and lobular pneumonia.

Etiology.—Third dorsal vertebra subluxation in combination with C. P. and K. P.

Pathology.—This begins with a capillary bronchitis, in which the mucous membrane lining the terminal bronchioles becomes hyperaemic and swollen. This extends to the alveoli and air cells with which the bronchiole communicates, which is followed by exudation, so that there is soon noticed multiple areas of consolidation over both lungs. This exudate is more or less purulent in character, and consists of mucus, desquamated epithelium and leucocytes. It may be mixed with blood, which slowly oozes from the dilated capillaries, giving to it a reddish color. During this stage of consolidation, if a section of the lung be placed in water it will sink. Occasionally some of the larger bronchi are affected, and may be obstructed so the areas of collapsed lung can be found under auscultation. Resolution is by

lysis, during which time the exudate or consolidated matter is slowly absorbed and eliminated from the body.

Symptoms.—The onset may be gradual, with pleurisy pains around the region of the nipple, axilla or scapula; with short, jerky respirations and a gradual rise in the bodily temperature. Other cases may begin more abruptly, with a chill and rapid rise in the temperature. The fever reaches 102 to 104 degrees, and is of the remittent type. The pulse is rapid, the breathing is rapid, shallow and jerky, and there is slight cyanosis. The respiratory movement is vertical, as the respiration is of the superior costal type, and all accessory muscles of respiration are brought into play.

There is respiratory retraction of the lower sternum and ribs, and marked tenderness over both lungs, which is traceable under the axilla and scapula to the 10th intervertebral foramen. The expirations are noisy and prolonged. Rales can be heard and are of the crepitant or sub-crepitant type. Cough is frequent and is accompanied with a blood-stained viscid expectorate. The cough is very loose at first and the expectoration is abundant, but as the air cells become consolidated and incapable of containing air it lessens. A marked decrease in the cough and expectoration, with increased area of consolidation, is a grave sign, and most of such cases die. With increased consolidation there is carbon dioxide poisoning, which diminishes the pain and increases the metabolic break-down material, thus increasing the excretory material of the body and throwing more work upon the excretory apparatus. About 75 per cent of pneumonia found in children is broncho-pneumonia, and in those cases cerebral symptoms are marked, the most common being delirium, but there may be stupor and coma. The fever disappears by lysis, but under adjustments will terminate abruptly.

Mild or sub-acute cases may run a prolonged course, with mild symptoms, consisting principally of cough, which may

be dry, little expectoration, malaise, anorexia, insomnia, rales, remittent fever and marked exhaustion.

Differential Symptoms.—Broncho-pneumonia differs from bronchitis, in that the fever of the latter is slight, the rales are large and of the mucous variety, the dyspnoea is less marked, areas of consolidation are absent and the expectoration is very profuse.

In lobar pneumonia the area of consolidation is circumscribed and unilateral, while in broncho-pneumonia the areas of consolidation are multiple and scattered on both sides. Lobar pneumonia has a sudden onset, and terminates by crisis in less than two weeks.

Acute tuberculosis is distinguished by its irregular fever, the hectic flush, the tubercular diathesis, the character of the expectoration and microscopical examination of the same.

CHRONIC INTERSTITIAL PNEUMONIA.

Definition.—A chronic inflammation of the interstitial connective tissue of the lung, bringing about its hardening and thickening. This is also known as cirrhosis of the lung and fibroid pneumonia.

Etiology.—This chronic inflammation is caused by a subluxation of Lu. P.

Pathology.—The inflammation of the connective tissue produces a hyperaemia of its blood vessels, a swelling of the tissue, which becomes permanent because of the proliferation of the connective tissue cells adding to its bulk, a loss of its elasticity and a final stretching of the air cells.

Symptoms.—During the early stages the most pronounced symptom is cough, which is dry and irritated by dust, cold air, and upon exertion. Dyspnoea soon becomes prominent, as does expectoration. The expectoration is muco-purulent, and may be accompanied with hemoptysis. There is moderate loss of flesh. The bronchi frequently be-

comes dilated and large; moist or mucous rales can be heard. In the advanced stages there is retraction of the respiratory muscles of the affected side, and thus decreased expansion upon that side. The ribs on the affected side approximate each other, the shoulder droops and there is a curvature of the spine in the upper dorsal region. The concavity of the curvature is toward the affected side, while its convexity is toward the elevated shoulder of the unaffected side. The unaffected side is greatly increased in size, the intercostal spaces on this side are wide and the ribs run more horizontally. There is usually a compensatory emphysema of the unaffected side. A patient suffering with chronic fibroid pneumonia may live many years.

PNEUMONOKONIOSIS.

Definition.—A form of chronic interstitial pneumonia characterized by consolidation of the lung tissue, and a characteristic expectorate whose color is dependent upon inhaled dust.

Adjustment.—Lu. P and K. P.

Pathology.—Same as chronic interstitial pneumonia. Expectorate is colored by dust from various materials, dependent upon the occupation of the patient.

Symptoms.—The symptoms are those of chronic bronchitis, with cough, labored breathing, deficient expansion on the affected side, deformity of the thorax, as in fibroid pneumonia, and profuse expectoration.

When affecting coal miners it is called anthracosis, and the sputa is black from the coal dust.

In stone cutters the sputa is laden with particles of stone or other minerals, which give to it a grayish color, and is caller chalicosis, or grinder's rot.

In iron workers the sputa is of a reddish or rusty color, and is called siderosis.

In millers the expectoration is grayish or white from the dust of flour or grain, and is called fibrosis.

PULMONARY ATELECTASIS.

Definition.—A condition in which there is a non-expansion or collapse of the lungs, or a portion of the lung.

Adjustment.—Lu. P.

Pathology.—This may be very variable, as any condition preventing the passage of air into the alveoli of the lung will produce atelectasis. Among these may be mentioned obstruction of the bronchi by consolidation; by pressure from without, such as tumor of the mediastinum, aneurism of the thoracic aorta, or an effusion of serum, as in sero-fibrinous pleurisy, empyema or hydrothorax.

Symptoms.—If the area of collapse is small no appreciation of the condition may be known to the patient, nor will there be any signs found upon physical examination of the patient. If larger, there may be deficient expansion on the affected side, rales, weakened respiratory sounds, and rapid respiration. There may be muscular twitching, cold extremities and slight cyanosis. This is not really a disease, but rather a symptom of many other incoordinations.

EMPHYSEMA.

Definition.—A condition in which there is a dilatation of the air sacs of the lungs, characterized by enlargement and distention of the lungs and difficult breathing.

Adjustment.—Lu. P.

Pathology.—The theory of inspiration is that the stretching of the air cell wall is directly produced upon too forceable and prolonged inspiration; the theory in expiration being that it is immediately produced by forced expiration, as in bronchial asthma. But for either of these theories to be operative the lung structure must be in a weak con-

dition. This weakness was formerly supposed to be congenital, but, since the development of Chiropractic, can be accounted for by the subluxation at lung place.

Most frequently the upper portion of the lungs are affected, and are of a pale red color with thin vesicular walls. The dilatation of the walls is so great in many cases that the interalveolar septa is torn and the capillaries destroyed, so the affected portion of the lung lacks normal blood supply and is dry. The resistance offered to the pulmonary circulation may be so great as to effect right ventricular hypertrophy.

Symptoms.—There are four forms commonly recognized —interstitial, atrophic, hypertrophic and compensatory.

The interstitial form is a condition in which the walls of the air cell are ruptured and the contained air escapes into the adjoining areolar tissue spaces. If the amount of escaped air is small the symptoms are not noticeable, but if large the air creeps along the course of the bronchi and trachea in the areolar spaces and forms a tumorous bulging, usually above the episternal notch. Upon palpation the tumor is easily compressible, and does not pit after removing the pressure. There are friction sounds. Subcutaneous emphysema is readily recognized from the softness of the bulging.

Atrophic Form.—In this form there is an atrophy of the cell wall and a coalescing of the sacs into large vesicles. This is also called small-lunged emphysema, because of the small capacity of the lungs for containing air. The intercostal spaces are narrow, the ribs slant very obliquely downward, and respiration is accomplished with great difficulty.

Hypertrophic Form.—This is the most common form of emphysema, and occurs more or less in all cases of asthma and other diseases in which respiration is difficult, the dyspnoea being prolonged. The onset is very gradual and may not be suspected until long after it is present. There is

dyspnoea, which may be constant or only felt upon exertion, wheezing breathing sounds, cyanosis, labored expiration and cough. The pulse is weak, but, as a rule, not rapid. There may be hypertrophy of the right ventricle, with its associated symptoms and signs. There is the characteristic emphysematous chest, in which the anterior-posterior diameter exceeds the lateral diameter. The respiratory movement is vertical, the sterno-mastoids are hypertrophied from over-use, and the neck veins are prominent. There is retraction of the upper abdomen upon inspiration. Rales may be present, vocal fremitus is lessened and the expirations are prolonged.

Compensatory Emphysema.—This is always unilateral, and is an adaptative condition when there is deficient expansion of the opposite side. Therefore, this form usually is associated with some other affection. It is commonly found with fibroid phthisis, unilateral interstitial pneumonia, or other conditions rendering one lung or a portion of one lung functionless. The symptoms of the hypertrophic form will supervene, except that they will be confined to one side.

ABSCESS OF THE LUNG.

Definition.—A condition in which there is an accumulation of pus in cavity of the lung, surrounded by a pyogenic membrane.

Adjustment.—Lu. P., with C. P. and K. P.

Pathology.—The abscess may be single, or multiple abscesses may form over both lungs, usually the former is the case. This most frequently is secondary, following lobar pneumonia in which resolution failed to occur, the consolidated area undergoing suppuration. The consolidated material not being absorbed and eliminated from the body through the kidneys, and subjected to excessive heat, soon undergoes decomposition. Adaptatively a membrane of cicatrical tissue is formed around the forming pus so as to

prevent its spread through the system, and thus producing pyemia. This encapsulating tissue is lined by a membrane called a pyogenic membrane. Later the pus may perforate this sheath and empty into the pleural cavity, or into a bronchus and be expectorated.

Symptoms.—There may have been the symptoms of some primary disease preceding those of the lung abscess. Upon the formation of an abscess there is a chill, followed by a high and irregular fever, which is characteristic of all pus diseases. The fever falls by crisis, with profuse sweating, and returns irregularly. There is cough and expectoration of a greenish-yellow pus which has a very offensive odor and contains destroyed tissue. If the pus is absorbed into the circulation the symptoms of pyemia may supervene. There is deficient expansion on the affected side. Tenderness is localized in the region over the abscess, and may be traced backward to the tenth intervertebral foramen. If there is erosion of the blood vessel walls, hemoptysis will occur. The blood being of a bright red color and not of acid reaction, which fast distinguishes it from hematemesis.

GANGRENE OF THE LUNG.

Definition.—Mortification or decomposition of the lung tissue.

Adjustment.—Lu. P. in combination with C. P. and K. P.

Pathology.—The gangrene may be of two forms—dry and moist. Dry gangrene occurs when an artery is obstructed, while moist gangrene occurs upon the obstruction of a vein. This will affect the entire part of the lung supplied or drained by the obstructed vessel. At first the tissue becomes of a dark red color from the stasis of the blood, the vessels become hyperemic, the interstitial tissue swells, and excessive heat produces decay.

Symptoms.—There is an irregular and moderate fever, with great prostration and a feeble pulse. The patient

rapidly becomes emaciated and debilitated. There is cough and expectoration of a greenish putrid expectorate. The expectorate is very profuse, and when permitted to stand will settle or form into three layers. The upper layer consists of a greenish froth, beneath which is a brownish-green fluid, and in the bottom a thick dark sediment.

TUMORS OF THE LUNG.

Tumors of the lung are usually either carcinoma or sarcoma. The gummata of syphilis may occur, but is more rare than the two former. A carcinoma is a malignant epithelial tumor. A sarcoma is a malignant tumor consisting of connective tissue.

Adjustment.—Lu. P. in combination with K. P.

Pathology.—This would depend upon the form present. In either case there is a growth which gradually increases in size, and in which there is progressive decay. For histological characteristics and differences of each, see Dunglison's dictionary.

Symptoms.—The symptoms are variable, according to the size, location and degree of malignancy of the growth. So long as the growth is small no noticeable symptoms are present, but as soon as it attains sufficient size, pressure symptoms will develop. There is a persistent irritative cough, which may be accompanied with the characteristic current-jelly sputa. Pain is localized and tenderness is traceable to the spine at the point of impingement. Dyspnoea may arise from pressure upon the trachea or bronchi. Dysphagia from pressure upon the esophagus, aphonia or dysphonia from pressure upon the inferior laryngeal nerve, local edema of the face, neck or upper extremities from pressure upon the veins draining them, and displacement of the heart so that the apex beat may be changed to the right or left of the normal. Later the characteristic sweetish odor is present, pain is of the gnawing type, the patient becomes emaciated, and the cancerous

cachexia develops. The affected side may be enlarged and immovable during respiration. The character of the respiration depends upon the location of the tumor; if located high in the thoracic cavity the breathing will be of the abdominal type, but if located low will be of the superior costal type. In the late stages, irregular fever with excessive prostration occurs. The mortality is high.

DISEASES OF THE PLEURA.

PLEURISY IN GENERAL.

The pleura is a large serous sac, or serous membrane, which enfolds the lungs, and is reflected upon the walls of the thorax and superior surface of the diaphragm. It has two layers—the visceral layer, which surrounds the lungs, and a parietal layer, which is adherent to the thoracic wall. Pleurisy is an inflammation of the pleura. The pain of pleurisy is produced by the friction of the two inflamed surfaces during respiration. Pleurisy may be either acute, sub-acute, or chronic. There are three forms recognized—fibrinous, sero-fibrinous, and purulent or empyema.

ACUTE FIBRINOUS PLEURISY. (Dry or Adhesive Pleur

Definition.—An inflammation or excessive heat of the pleura, with a slight adhesive exudate.

Etiology.—Pleurisy is caused by a subluxation of the third dorsal vertebra, which impinges the nerves having to do with the calorific function in the pleura, producing inflammation.

Pathology.—This form of pleurisy is also known as adhesive or dry pleurisy, and is characterized by hyperaemia of the pleural vessels, swelling of the pleura, and at first a dryness of its surface, during which time pain is extreme. Later a scanty exudation occurs. This exudate is rich in fibrin, as the name of the affection indicates, and is very

adhesive, or sticky, remaining upon the part from which it exudes. Frequently adhesions form so as to minimize the pain in cases of prolonged duration. In this form the inflammation ceases at this point.

Nerve Tracing.—Tenderness is traceable from Lu. P. outward, under the axilla, becoming diffuse over the area affected.

Symptoms.—The onset is sudden, with stitch pains around the region of the nipple, axilla or scapula. This pain is greatly increased upon movement, deep breathing and cough, all of which is more or less suppressed by the patient. The respirations are irregular, short and jerky, and are usually of the superior costal type. There may be slight fever of 101 degrees. Friction sounds are audible upon auscultation. This can be differentiated from intercostal neuralgia, in that fever and friction sounds are absent, and that the pain is not increased upon movement.

SERO-FIBRINOUS PLEURISY.

Definition.—An inflammation or excessive heat of the pleura, with an effusion of serum into the pleural cavity.

Etiology.—Lu. P., C. P. and K. P. subluxations.

Pathology.—Early there is swelling of the serous membrane, hyperaemia of its blood vessels, and exudation from its surface. Later there is an effusion of serum into the pleural cavity and an accumulation of serum in the pleural tissue. The pleural tissue becomes thickened, and often adhesions form. From the adhesions the heart may be displaced, the lung unable to expand, or the diaphragm unable to descend. The effused serum compresses the lung and prevents its normal expansion.

Symptoms.—The onset is gradual, or it may follow an attack of acute fibrinous pleurisy. There are sharp stitch pains in the side, which are aggravated by coughing, movement, and deep breathing. The respirations are rapid and

shallow, 30 to 35 per minute. There is a slight dry, hacking cough, which is suppressed as much as possible by the patient because of the pain it produces.

As soon as the effusion occurs the pain is diminished, for the effused serum acts as a lubricant between the two inflamed layers of the pleura. There may be orthopnoea, dyspnoea is increased, and cyanosis is present. The patient lies on the affected side so as to permit increased expansion of the lung on the unaffected side. The cough becomes very distressing. The affected side is one or two degrees warmer than the other. There is bulging of the intercostal spaces, the chest remains large during expiration, and the heart may be displaced. If the effusion is large the pressure downward may be sufficient to displace the liver on the right side or the spleen on the left side. Upon percussion there is a dull note in place of the clear resonance of health.

During the stage of resorption the signs of the effusion gradually diminish as the serum is being absorbed. The apex beat returns to its normal position, the bulging of the intercostal spaces subsides, the breathing is deeper and slower, and the cough disappears. This stage may last several weeks, but under Chiropractic adjustments occurs with great rapidity.

Different Varieties.—Latent pleurisy is a mild type, in which few and moderate symptoms are present.

Diaphragmatic pleurisy is an inflammation of the pleura on the superior surface of the diaphragm, and is characterized by pain under or along the costal margin; abdominal muscles are fixed, attacks of dyspnoea, choking or smothering with anginal pains.

Interlobular pleurisy is a form in which the inflamed area lies between the lobes of the lung, and if extensive adhesions occur, and if there is a retention of serum, it may be called encysted pleurisy.

Tuberculous pleurisy occurs during the course of a pulmonary tuberculosis when the tubercles form on the pleura, the inflammation of the tubercle in the necrosis being sufficient to produce pain upon friction.

Differential Symptoms.—Pleurisy differs from pneumonia in that the latter has a high fever, rusty sputa, herpes labialis, and signs of consolidation. From hydrothorax, in that fever is absent, also pain and friction sounds upon respiration.

PURULENT PLEURISY OR EMPYEMA.

Definition.—An inflammation of the pleura in which there is suppuration and the formation of pus.

Adjustment.—Lu. P., C. P. and K. P.

Pathology.—Empyema passes through all the stages of acute and sero-fibrinous pleurisy, therefore consists of swelling of the pleura, hyperemia of its blood vessels, exudation from its surface, and effusion into the pleural cavity. If the effusion remains in the cavity, not being absorbed, and the excessive heat is continued, the serum will undergo suppuration. The pus may be absorbed or perforate through the thoracic wall, forming a fistula. Adhesions frequently occur, producing retraction of the thoracic walls.

Symptoms.—This might be considered as the tertiary stage of pleurisy, therefore the symptoms of acute and sero-fibrinous pleurisy will precede those of empyema. As soon as the effused serum undergoes suppuration and pus is being formed, the bodily temperature will be greatly increased. The fever is irregular in its course and of the intermittent type, alternating with periods of free sweating. Blood examination shows leucocytosis. The patient rapidly becomes emaciated, and there may be delirium and stupor. If the pus is absorbed and eliminated the symptoms subside, but should the kidneys be working improperly the symptoms

of pyaemia will supervene. In many cases the pus perforates through the thoracic wall, forming a fistula, through which the pus is discharged; or there may be a perforation of the visceral layer of the pleura and the pus finds its way to the bronchi, from whence it is expectorated. Pleurisy may become chronic without the effusion becoming purulent, in which case the effusion may exist, without increase or decrease in size, for months. The physical signs and symptoms are the same as sero-fibrinous, except that they may be more moderate and fever is absent.

CHRONIC DRY PLEURISY.

Definition.—A chronic dry inflammation of the pleura in which there are adhesions, because of the fibrin exudate which is not absorbed.

Adjustment.—Lu. P. in combination with K. P.

Pathology.—Same as acute fibrinous pleurisy.

Symptoms.—There are dragging sensations with occasional stitch pain in the affected side, but the general health may be unimpaired for years. There may be a retraction of the thoracic wall if adhesions have occurred between the visceral and parietal layers of the pleura. The respiratory sounds are weakened. In marked cases there may be a shrinking of the affected side, displacement of the heart and curvature of the spine.

HYDROTHORAX.

Definition.—Is an exudation of a non-suppurative fluid in the pleural cavity, is usually bilateral, and often occurs in connection with general dropsy.

Adjustment.—Local in upper dorsal with K. P., except when due to general dropsy, as occurs in nephritis, when K. P. alone is adjusted.

Pathology.—There are no marked structural changes occurring, but there is a gradual oozing of serum or other

fluid into the pleural cavity, which compresses the lung so as to prevent normal expansion. The adjacent tissues are edematous.

Symptoms.—Bulging of the intercostal spaces, pitting over the ribs, dyspnoea, relieved upon assuming the erect posture, and cyanosis from improper oxygenation of the blood. The pressure symptoms are the same as in pleurisy with effusion. It is distinguished from pleurisy by the absence of fever, bilateral character, absence of pain, and the history of the condition of which it may be a symptom, as in the case of nephritis.

PNEUMOTHORAX.

Definition.—An accumulation of air in the pleural cavity, and is rarely a simple disease, but is usually associated with fluid or pus, in which case it is called hydropneumothorax, or pyopneumothorax.

Adjustment.—Lu. P. If pyopneumothorax, K. P. should be adjusted.

Pathology.—The gases that are usually found are oxygen, carbon dioxide and nitrogen, either in the free state or combined in various proportions. If the quantity is large and fills the cavity it will compress the lung and hinder respiration.

Symptoms.—This condition usually is associated with tubercular pleurisy, which perforates the pleura, or with empyema, therefore the symptoms of the associated condition may co-exist. The onset is abrupt, with sudden pain in the side, intense dyspnoea and cyanosis. The pulse is frequent and weak, the pleural cavity becomes distended, the heart and abdominal viscera may be displaced from the pressure, and the intercostal spaces are widened, so that the chest wall appears smooth. Vocal fremitus is diminished or absent, and the voice sounds have a ringing note. There is the history of a perforating wound or of a malignant

perforating disease, such as tuberculosis, abscess or gangrene of the lung.

CANCER OF THE PLEURA.

These may be either carcinoma or sarcoma, and may be single or multiple.

Adjustment.—Lu. P., K. P.

Pathology.—An excessive accumulation of cells in which there is colloid degeneration. Sometimes defined as a riotous growth, which consumes the nourishment of the surrounding tissue.

Symptoms.—So long as the growth is small and the decay is slight no symptoms may arise. Later there are localized pains, cough, expectoration of the current-jelly character, and dsypnoea. The sputa has an offensive odor, and consists of mucus, pus, destroyed tissue and colloid material, which is the product of cancerous degeneration. Dysphagia results from pressure upon the esophagus, and aphonia from pressure upon the inferior laryngeal nerve. There may be distention of the face and neck veins from pressure upon the superior vena cava or other large veins draining the upper extremities. Edema of the face, neck and upper extremities may occur from the same cause. The affected side is enlarged and the heart may be displaced. The cervical glands may be enlarged and hard, cancerous cachexia develops, the patient becomes emaciated, and pyopneumothorax may occur.

SECTION VI.

DISEASES OF THE CIRCULATORY SYSTEM.

THE PERICARDIUM.

The pericardium is a large sero-membranous sac surrounding the heart and the trunks of the large blood vessels which lead into and from it. It has two layers, the visceral and parietal. The visceral layer being the one reflected upon the myocardium.

Pericarditis is an inflammation of the pericardium, and is frequently associated with diseases of the lung and pleura, for the reason that an interference with the work of one also interferes with the work of the other, because they work in close conjunction one with the other, and, also, they are in adjacent zones, hence may be affected by the same vertebral subluxation.

ACUTE FIBRINOUS PERICARDITIS.

Definition.—An excessive heat or inflammation of the pericardium in which there are frequently adhesions and a slight fibrinous exudation from its surface.

Adjustment.—H. P.; also C. P. and K. P., if fever exists.

Pathology.—The hyperemic stage is marked by a congestion of the visceral layer, giving it a dark red color and a swollen appearance. Within a few days there is an exudation from its surface which is deficient in serum and rich in fibrin, is of a very sticky consistency, and has a great tendency to form adhesions. The inflammatory process may affect the entire pericardium, in which case it is spoken

of as being diffused pericarditis, or it may be limited to a part of either layer, and spoken of as circumscribed.

Nerve Tracing.—Tenderness can be traced from the ninth intervertebral foramen outward, under or over the scapula and under the axilla, becoming diffuse over the region of the pericardium. In unusual cases the tenderness may lead over the shoulder, passing beneath the clavicle to the region of the pericardium.

Symptoms.—Usually begins with chilliness or possibly a severe chill, which is followed by a rapid rise in the bodily temperature. The fever is slight, and is of the remittent or may be of the intermittent type. There is a sense of constriction in the chest, with substernal discomfort and a pain in the pericardium. There may be palpitation of the heart, a weak, irregular and often rapid pulse, with shooting pains in the region of the heart, simulating angina. The respirations are hurried and shallow, resembling those of pleurisy. Upon auscultation, friction or vibrating sounds are audible. In thin individuals there may be a bulging of the chest over the region of the pericardium. Adhesions may occur between the visceral and parietal layers, so that the heart's action is greatly interfered with and the apex beat may be displaced to one side, depending upon the nature of the adhesion. Sometimes the adhesions will form between the parietal layer and the diaphragm and hinder respiration, in that it prevents the normal descent of the diaphragm.

SERO-FIBRINOUS PERICARDITIS.

Definition.—An inflammation of the pericardium in which there is an effusion of serum.

Adjustment.—H. P., C. P. and K. P.

Pathology.—This begins, as does the acute fibrinous form, with hyperemia and swelling of the serous membrane; the velocity of the blood in the pericardial capillaries is lessened and an exudation occurs from its surface. Later

there is an effusion of serum poured out from the serous membrane, which may vary greatly in quantity from a few ounces to one or two pints. The serum is deficient of fibrin, therefore adhesions do not so frequently form as in the acute fibrinous form. The effused serum more or less compresses the heart and lungs, so that the heart's action and respiration may be interfered with to a marked degree. The vertebral subluxation interferes with the calorific function, thereby producing the excessive heat.

Symptoms.—The onset may be gradual, with substernal discomfort and stitch pains in the region of the heart. The pain and feeling of discomfort is aggravated by exertion and pressure. The respiration and heart action is accelerated, cyanosis and orthopnoea are present, and there may be a slight fever. With the effusion of serum the pain subsides, but the discomfort of the chest, sense of suffocation and pressure is increased. The face may become deeply cyanotic, and has an anxious expression. At this stage orthopnoea is more pronounced, breathing is more labored; palpitation, weak, irregular pulse and irregular fever are present. The variations of these symptoms depend upon the amount of the effusion. If the absorption does not take place soon the pericardial sac becomes stretched or dilated, the effused serum may suppurate, and purulent pericarditis will result. In most cases there is insomnia, fainting and frequently delirium, when the fever is high. The anterior and lateral walls of the chest are enlarged, the intercostal spaces are prominent, the apex beat may become imperceptible, and there is great asthenia. Loss of Strength (adv

PURULENT PERICARDITIS.

Definition.—Is an inflammation of the pericardium in which there is the formation of pus. Also known as empyema of the pericardium.

Adjustment.—H. P., C. P. and K. P.

Pathology.—This form of pericarditis passes through the two former stages, viz.: Acute fibrinous and sero-fibrinous,

in which there is swelling of the pericardium, congestion of its blood vessels, exudation from its surface, and effusion of serum into the pericardial sac. If this serum is retained here for a great length of time and the excessive heat is prolonged it will be transformed into pus. Adhesions may also occur.

Symptoms.—Earlier signs and symptoms are those of a sero-fibrinous type, and followed by irregular chills, fever and sweats. May perforate into the pleural cavity.

HEMORRHAGIC PERICARDITIS.

Definition.—An inflammation of the pericardium in which there is a hemorrhage or extravasation of blood into the sac during the course of the inflammation.

Adjustment.—H. P. alone for the hemorrhage. The rest of the adjustment depends upon the form of pericarditis with which the hemorrhage is associated. See two preceding forms.

Pathology.—The effusion of blood may occur in any form, but most commonly found in purulent pericarditis when there is perforation. In such cases the wall of the vessel may have been destroyed by ulceration. The hemorrhage may occur from a relaxation and separation of the muscular fibres forming the vessel walls, which permits a small gradual oozing of the blood. It may occur from the rupture of an aneurism of the aorta.

Symptoms.—These depend upon the extent of the hemorrhage and the condition with which the hemorrhage may be associated. If the oozing of blood is slight, no symptoms other than those of simple or sero-fibrinous pericarditis may exist. If, however, the hemorrhage should be large, there is severe dyspnoea, signs of effusion, localized pain in the region of the heart, a sudden drop in the temperature, anxious expression of the face, cold perspiration on the skin, feeble action of the heart, rapid and feeble respiration, and sudden death.

CHRONIC ADHESIVE PERICARDITIS.

Definition.—A condition or form of pericarditis, chronic in nature, in which there is an adhering of the layers of the pericardium or of the pericardium to the pleura. It is usually a sequel of the acute fibrinous form.

Adjustment.—Same as acute pericarditis.

Symptoms.—The symptoms of an acute attack always precede. There is a bulging of the chest over the heart, and inspiratory pain. If the adhesions exist between the pericardium and pleura there is a circumscribed retraction of the intercostal muscles at the point of the adhesion. Very frequently there is adhesion to the diaphragm, in which case it cannot be lowered to the full extent; this produces painful breathing, most marked upon inspiration. Apex beat is displaced and the heart's action may be interfered with so that the signs of hypertrophy may develop.

DISEASES OF THE HEART.

ACUTE ENDOCARDITIS.

Definition.—Is an excessive heat or inflammation of the inner lining of the heart.

Etiology.—Subluxation of the second dorsal vertebra.

Pathology.—The first stage consists of a swelling of the lining endothelium and a hyperaemia of its capillaries, giving to it a dark red color. This is especially marked upon the valve segments, because of their delicate structure. As the exudation occurs, a thickening and roughening of the membrane is produced by a proliferation of the connective tissue in the adventitia. This more or less interferes with the action of the valves, and the symptoms of valvular trouble may arise. If any of the formations should break off or become detached and carried by the blood stream, they are known as emboli, and may produce embolism.

Nerve Tracing.—Since this condition is produced by a second dorsal subluxation, tenderness will be found leading outward from the ninth intervertebral foramen, and is traceable beneath the axilla, becoming diffuse over the region of the heart.

Symptoms.—If the condition is slight, or in the early stage, the symptoms may be latent or very moderate, consisting of precordial pain, irregular pulse, slight fever, dyspnoea and a soft, low-pitched murmur over the aorta or mitral area, depending upon the valve or valves affected. If the condition is more severe, or if ulcerative endocarditis exists, there is a sudden chill, followed by a rapid and high rise in the bodily temperature. The fever takes an irregular course, having many remissions or intermissions, which is typical of suppurative fever. The precordial pain is marked, as is the dyspnoea and thoracic oppression. During the paroxysms of fever there may be delirium, stupor and coma. There may be murmurs corresponding to the valves affected, as the valves may contain ulcerations which permanently deform them. Sloughing of the ulcerated valve segments gives rise to emboli. The spleen is enlarged, albuminuria may be present, the leucocytes are increased in number, sordes accumulate upon the teeth, and the symptoms of the typhoid status may supervene.

The termination depends upon the severity of the case. If moderate, the condition usually merges into chronic endocarditis, with valvular disease of the heart; if the ulcerative process is marked there may be toxemic jaundice and death occurring suddenly, the duration rarely exceeding eight weeks.

Should the case fall into the hands of the Chiropractor early in the course of the affection, the inflammation will subside, normal function being restored to the parts involved, and recovery will be rapid.

CHRONIC ENDOCARDITIS.

A continuation or prolongation of the acute form, in which there is deformity of the valve segments, with regurgitation or stenosis.

Adjustment.—Same as the acute form.

Pathology.—See acute endocarditis.

Symptoms.—Since in chronic endocarditis there is a deformity of the valve segments so that they are incapable of properly guarding their orifice, there is regurgitation, and the symptoms will depend upon which valve is thus affected. Should there be adhesions of the valve segments so that the orifice is constricted and interference is offered to the flow of blood, the condition will be known as stenosis, and the symptoms will depend upon the valve thus obstructed.

In order to overcome the impaired function of the valves and to maintain the circulation as nearly normal as possible, the heart increases in size and strength. This is an adaptative enlargement and is commonly spoken of as a compensatory hypertrophy. The period during which this compensatory hypertrophy exists is called the period of compensation. Should the heart muscle lose its elasticity and dilate, thus becoming unable to maintain proper circulation, it is said that compensation is lost or there is ruptured compensation.

When compensation is lost there is marked dyspnoea, cyanosis, dropsy beginning in the feet, feeble and rapid pulse, pallor of the skin, congestion of the viscera, and general disturbed metabolism. The patient rapidly fails in health and soon dies.

AORTIC INCOMPETENCY.

Definition.—An abnormal condition of the left semilunar valve in which it is impossible to properly close the orifice during the diastole or dilatation of the heart.

Adjustment.—H. P.

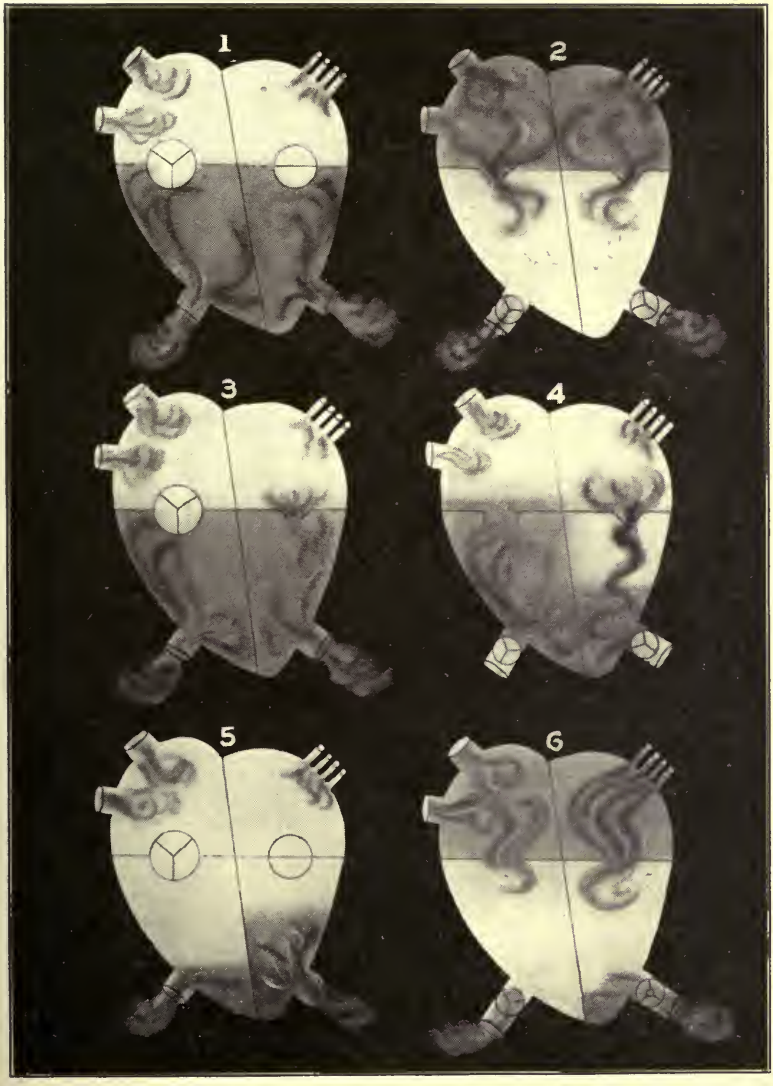


Fig. 7.—Drawing by Prof. S. J. Burich.

1. Normal Heart During Systole.
2. Normal Heart During Diastole.
3. Mitral Incompetency.
4. Mitral Stenosis.
5. Aortic Stenosis
6. Aortic Incompetency.

Pathology.—If this results from acute or ulcerative endocarditis there may be either a deformity or a laceration of the valve segments, or an adhesion of the segment to the wall of the aorta. There may be a relaxation of the circular fibres surrounding the orifice, making it so large that the valve, though being normal, is incapable of properly closing the opening during the diastole. On account of the aortic valve failing to properly close at the proper time, the blood is permitted to flow back from the aorta into the left ventricle, and the normal flow of blood from the left auricle continuing, causes an over-filling of the ventricle, which results in a stretching of the ventricular walls and a dilatation of the cavity. The extra effort of the ventricle to empty itself of this large supply of blood results in the adaptative hypertrophy of its walls.

Symptoms.—So long as the hypertrophy is maintained and compensates for the regurgitation, the patient will not suffer any marked symptoms. The pulse is strong, slow and steady, the face is ruddy, the circulation in the arteries is accelerated, the individual is strong, active and ambitious, and requires little sleep. If the hypertrophy should exceed that required for compensation to the regurgitation, there will be pulsation of the capillaries freely noticeable beneath the finger nails, the characteristic water-hammer pulse (Corrigan's pulse), headache, insomnia, tinitus, congestion of the face and eyes, vertigo, syncope, cough, and sometimes hemoptysis.

As soon as compensation weakens there is palpitation, with attacks of angina pectoris, which causes great anxiety upon the part of the patient. Dyspnoea, cough and cyanosis are markedly increased, and there is engorgement of the viscera. The signs of venous stasis appear, with dropsy, beginning in the feet and gradually extending upward. The liver becomes enlarged, the kidneys become congested, the urine is diminished in quantity and contains albumen. Death occurs suddenly in this disease, more frequently than in any other form of valvular trouble.

Physical Signs.—Upon palpation, the apex beat is found to be displaced downward and to the left, often as low as the eighth intercostal space, and to the left of the mammillary line. Upon percussion, the area of cardiac dullness is increased vertically and to the left, and, upon auscultation, a soft, low-pitched, blowing murmur can be heard over the aortic area, at the second right costal cartilage. Inspection may show a bulging of the chest.

AORTIC STENOSIS.

Definition.—A constriction of the aortic orifice which prevents the normal flow of blood from the heart into the aorta.

Adjustment.—H. P.

Pathology.—Aortic stenosis may result from a contraction of the circular muscular fibres surrounding the aortic orifice, or from a thickening of the valve segments, making them non-flexible and unevenly shaped, or there may be a calcareous deposit upon the segments so that they project inward and cannot be pressed back by the blood. Stenosis may result from adhesions of these segments, and the degree may vary greatly in different cases.

Symptoms.—The lumen of the aortic opening being diminished, the amount of blood passing through during the normal systole will be lessened, but to compensate for this the systole is prolonged and the diastole shortened. The pulse is characteristic, and is known as pulsus tardus; it is a small, slow, hard pulse. The systole is insufficient to entirely empty the left ventricle, and when the normal amount of blood is forced into it from the auricle the endocardial pressure is raised, which effects hypertrophy of the ventricular walls. The apex beat is displaced downward and to the left, the area of cardiac dullness is increased vertically and to the left, and a sharp, shrill, high-pitched systolic murmur can be heard at the aortic area. There are often attacks of vertigo, syncope, and palpitation upon the slight-

est exertion. Later, as compensation is lost, there is dilatation of the ventricular walls, and, possibly, the development of mitral insufficiency. The pulse then becomes rapid and weak; there are signs of venous stasis, Cheyne-Stokes respiration may appear and is a grave symptom, as but few patients with this type of respiration ever recover.

MITRAL INCOMPETENCY.

Definition.—A condition of the mitral valve in which it is unable to properly close the left auriculo-ventricular opening during the systole of the heart.

Adjustment.—The adjustment should be given at H. P.

Pathology.—As in other valvular troubles, there may be a great variety of pathological conditions present in mitral incompetency. This may be produced by a relaxation of the circular muscle fibres surrounding the orifice, thus rendering the valves too small to properly close the enlarged opening, permitting regurgitation. There may be deformities or adhesions of the valve segments, resulting from ulcerative endocarditis. There may be a calcareous deposit upon the valve, making its segments thick and non-flexible, or the cordae tendinae may be shortened, stiffened or permanently contracted. As a result of the regurgitation the left auricle hypertrophies, and when compensation ruptures, dilates.

Symptoms.—This is the most common form of valvular disease of the heart, sixty per cent of all valvular defects being of the mitral valve. So long as compensation is strong the symptoms are latent, and the signs of left auricular hypertrophy, with a soft, blowing systolic murmur in the mitral area, are the only indications of the trouble. As soon as compensation is lost there is dyspnoea and cyanosis upon exertion, attacks of palpitation and, possibly, orthopnoea; a distressing cough from the congestion of the lungs, which occurs because of the regurgitation into the pulmonary veins, preventing the proper oxygenation, and

finally ventricular hypertrophy. So long as the left ventricle does not hypertrophy the apex beat is in the normal position, and the area of cardiac dullness will be increased only to the left and superior, but as soon as the left ventricle does enlarge the apex beat will be displaced downward and to the right, and the area of cardiac dullness will be increased vertically and to the left. There may be ineffectual systole, which is noticeable at the wrist; this is produced when the greater part of the blood in the left ventricle regurgitates upon the ventricular contraction, the amount of blood being forced into the aorta being insufficient to cause the pulse wave. This gives rise to an intermittent pulse, but the intermissions may be far apart. Upon inspection it may be discovered that the chest wall over the heart is noticeably enlarged and that the area of cardiac impulse is increased. This is more noticeable in children and thin individuals. A soft, low-pitched, blowing murmur, systolic in time, can be heard in the mitral area, and when heard, is pathognomonic of the trouble. As dilatation occurs the pulse becomes more feeble and rapid, dropsy appears in the lower extremities and gradually extends upward; pulmonary congestion becomes extreme, dyspnoea and cyanosis are marked, and the patient may become unable to move about or to lie in the dorsal posture. If the dropsical condition is severe the patient will have to constantly assume an erect position, and Cheyne-Stokes respiration may be present.

If the incompetency is due to a relaxation of the circular muscle fibres surrounding the mitral orifice, it is caused by a lack of motor power being expressed in these fibres, and if the subluxation is properly adjusted, the motor power will quickly be restored and the symptoms will disappear. If there is a deformity of the valve segments, it is the result of excessive heat because of pressure upon the calorific nerves; the adjustment will restore normal transmission of the calorific impulses, heat will then become normal, and the deformed or thickened valve will gradually assume its normal shape and structure. Numerous cases are on record in

which complete restoration has been effected through Chiropractic adjustments.

MITRAL STENOSIS.

Definition.—A condition in which there is a narrowing of the mitral orifice.

Adjustment.—Same as mitral incompetency.

Pathology.—There may be a contraction of the circular muscle fibres surrounding the mitral orifice, decreasing its size and preventing the normal flow of blood into the left ventricle.

There may be deformities and adhesions of the valve segments, which produce the "button-hole" valve. These deformities may be the result of excessive heat, in which there has been proliferation of the connective tissue of the valve or a deposit of calcareous material upon the free edges of the segments.

Symptoms.—This disease may be associated with mitral incompetency, and the symptoms vary with the degree of constriction. The most constant symptoms that appear early are dyspnoea and attacks of palpitation. The pulse is small, irregular and feeble. There is pulmonary congestion with its attending symptoms, especially cough and frothy expectoration. Hypertrophy aims to adaptatively compensate for the stenosis, and, as a result, the area of cardiac dullness is increased superiorly and to the left; a short, sharp, shrill, high-pitched murmur can be heard in the mitral area during the diastole of the ventricle. In order to increase the force of the pulmonary circulation and overcome the pulmonary congestion, the right ventricle becomes hypertrophied, and the signs of right ventricular hypertrophy may exist. The apex beat may be displaced to the left, but not much to the inferior. There may be a bulging of the lower sternum if the right ventricle is enlarged, and the fifth and sixth costal cartilages may also be

prominent. With the loss of compensation there is nearly always the appearance of Cheyne-Stokes respiration, cyanosis, general weakness and emaciation, and finally death.

TRICUSPID INCOMPETENCY.

Definition.—A valvular incoordination of the heart in which the tricuspid valve fails to properly guard the right auriculo-ventricular opening.

Adjustment.—Upper dorsal. H.P.

Pathology.—In the great majority of cases there is a stretching of the tricuspid orifice, thus making the valve segments insufficient to properly guard the opening. This dilatation may be adaptative to mitral incompetency, in which there is pulmonary congestion, and in which the right ventricle aims to overcome it by hypertrophy. Or this may occur as a part of the right ventricular dilatation. Less frequently it is the result of deformity of the valve segments or contraction of the cordae tendineae.

Symptoms.—There is regurgitation of the blood from the right ventricle into the right auricle during the systole of the ventricle, which increases the endocardial pressure of the auricle, and soon results in hypertrophy or dilatation of the auricle walls. Resistance is offered to the flow of blood from the pre and post cava, which is manifested in edema of both lower and upper extremities. There is pulsation of the juglar veins and of the liver, which can be felt upon palpation. The viscera becomes congested and the liver palpably enlarged. The signs of hyperthophy are marked upon the right side. The area of cardiac dullness is increased vertically and to the right, the apex beat may be normal or displaced slightly to the left, and auscultation reveals a soft, low-pitched, blowing murmur, systolic in time, over the tricuspid area. There is a marked prominence of the lower sternum in the young, and a noticeable pulsation to the right of the sternum. Pulsation may be noticeable

over the upper epigastrium. This is a rare form of valvular trouble, and is considered as having the most favorable prognosis.

TRICUSPID STENOSIS.

Definition.—Is a constriction or narrowing of the tricuspid orifice diminishing its capacity for transmitting blood.

Adjustment.—Upper dorsal. H. P.

Pathology.—If the condition is a sequel of endocarditis, there is the same pathology as in mitral stenosis, viz: the deformity, adhesion or calcareous deposits of the valves, which diminishes the size of the opening and prevents the normal flow of blood into the right auricle. It may be produced by pressure upon the motor nerves leading to the part, causing an abnormal expression of this function, in which the circular fibres surrounding the opening are abnormally contracted, thus diminishing its lumen.

Symptoms.—The earlier subjective symptoms consist of attacks of palpitation, dyspnoea and cyanosis, which are increased upon exertion. There may be precordial pains, which usually are alarming to the patient. The resistance offered to the onward flow of blood is so great that venous stasis results, with dropsy and marked cyanosis. The right auricle adaptatively enlarges, therefore the area of cardiac dullness is increased to the superior and right; a short, sharp, shrill pre-systolic murmur can be detected upon auscultation over the tricuspid area. The apex beat may be but little displaced by the enlargement.

This is the rarest form of valvular disease of the heart, and when it does occur, is often associated with some other valvular defect, so the co-existing symptoms of mitral disease or right side dilatation should also be considered.

PULMONARY INCOMPETENCY.

Definition.—An abnormal condition of the right semilunar valve, in which it is unable to properly guard the pulmonary orifice during the ventricular diastole.

Adjustment.—Upper dorsal vertebrae, usually the second.

Pathology.—This is also a very rare form of valvular trouble, but when it does exist the same condition as that found in aortic incompetency is present. There may be a dilatation of the muscular fibres surrounding the opening or deformities of the valve segments so that they fit imperfectly and permit the backward flow of blood.

Symptoms.—Upon the ventricular diastole the blood flows back from the pulmonary artery into the right auricle, thus diminishing the amount of oxygenation and producing cyanosis. This, with dyspnoea, palpitation and distention of the superficial veins, are the most constant early symptoms. In order to partially overcome this defect, the right ventricle hypertrophies, thus increasing the area of cardiac dullness to the right and downward.

Upon inspection the lower and right costal cartilages are pushed forward, and there is a large area of visible cardiac pulsation over the upper abdomen.

Auscultation reveals a low-pitched, blowing murmur over the pulmonary area at the second left interspace which is diastolic in time of occurrence.

Finally, as compensation is lost, there is marked venous stasis, dropsy, congested viscera, suffocative attacks and precordial distress.

PULMONARY STENOSIS.

Definition.—An abnormal condition of the pulmonary opening, which is constricted, presenting difficulty to the passage of blood from the right ventricle into the pulmonary artery.

Adjustment.—Second dorsal verterba.

Pathology.—As in aortic stenosis, there may be a contraction of the circular muscle fibres surrounding the opening, or deformities or adhesions of the valve segments. This is a rare form of valvular disease, and sometimes is congenital.

Symptoms.—Hypertrophy compensates for the valvular defect in this incoordination, as in other forms of disease, and so long as the compensation is maintained the symptoms are slight. When lost, it gives rise to cough, dyspnoea, cyanosis, dropsy, and finally death. The right ventricle becomes hypertrophied so that the area of cardiac dullness is increased vertically and to the right. There may be a large area of visible pulsation to the right of sternum and over the epigastrium.

Upon auscultation a sharp, shrill, high-pitched murmur can be heard over pulmonary area during the ventricular systole.

Finally, there is venous stasis, dropsy, pulmonary congestion, suffocating attacks, Cheyne-Stokes respiration, emaciation, and finally death.

Athletes Heart

HYPERTROPHY OF THE HEART.

Definition.—An over-growth or increase in the muscular tissue of the heart walls, characterized by forcible impulse, over-fullness of the arteries, diminished blood in the veins, and accelerated circulation.

Hypertrophy may exist without dilatation, and when such is the case it is called simple hypertrophy. If the hypertrophy is associated with dilatation or increase in the size of the cavities, it is called eccentric hypertrophy. If in hypertrophy of the heart the cavities are diminished in size, it is called concentric hypertrophy. This latter form is usually a post mortem finding.

Adjustment.—Hypertrophy of the heart is an adaptative condition, therefore the adjustment should be given locally for the condition to which the hypertrophy is adaptative. This is usually at H. P., but may be elsewhere. Hypertrophy of the heart in athletes is common, and in those cases the adjustment is always at H. P.

Pathology.—The hypertrophy may be general, affecting the walls of all the cavities, but usually it is limited to the wall of one or more cavities, and this most frequently on the left side. Most frequently this is adaptative to mitral incompetency and aortic incompetence. The left ventricle is more frequently enlarged than the left auricle, and eccentric hypertrophy is the form most commonly met with. There is a marked increase in the amount of the muscular tissue of the organ. It is of a more firm consistency and of a darker color. When the enlargement is confined to a single cavity the heart is greatly changed in shape, this change depending upon the cavity enlarged.

Symptoms.—Left ventricular hypertrophy, may be adaptative to mitral incompetency, aortic stenosis or incompetence, aneurism of the aorta, and to arterio-sclerosis, in which there is great peripheral resistance to the onward flow of blood. When a result of any of the foregoing conditions, the symptoms of each will be associated with that of the hypertrophy. The heart is enlarged, the apex beat is displaced downward and to the left, because of the added weight, the left side of the chest may bulge, and the area of visible pulsation is increased except when lying upon the back, when it may be diminished, as the heart drops back in the mediastinum.

The pulse is forcible, slow, non-compressible and regular, unless regurgitation is present to a marked degree. The skin is flushed, capillary pulsation may be seen beneath the finger nails, and murmurs are absent unless there are valvular defects.

Right Ventricular Hypertrophy.—This may be adaptative to mitral stenosis or incompetency, tricuspid incompetence, pulmonary stenosis or incompetency, or any other condition which interferes with the flow of blood from the right ventricle to and through the lungs, causing the heart to over-work. In this there is moderate dyspnoea, which is more marked upon exertion, precordial discomfort, cough and expectoration of frothy mucus, characteristic of pulmonary congestion, prominence of the lower sternum and pulsation to the right of the sternum.

Auricular Hypertrophy.—Hypertrophy of the left auricle wall is adaptative to mitral stenosis or incompetency. There is usually throbbing in the head, tinitus aurium, headache, thoracic distress and the associated symptoms of mitral incoordination.

Right auricular hypertrophy is adaptative to tricuspid stenosis or incompetence, and is accompanied by edema, suboxidation of the tissues, dyspnoea, cyanosis and precordial discomfort. This is the rarest form of cardiac hypertrophy.

DILATATION OF THE HEART.

Definition.—An abnormal condition of the heart in which the size of the cavities is increased out of proportion to the thickness of their walls, and is characterized by dyspnoea, cyanosis and feebleness of the circulation.

Adjustment.—H. P.

Pathology.—When compensation is lost in valvular diseases, the result is dilatation. In fact, the dilatation, which takes the place of hypertrophy, is the thing which brings about lost compensation. The muscular fibres relax, the heart is enlarged, the walls become thinner, but still may be thicker than normal, and the cavities are greatly enlarged. With the enlargement of the cavities the various valvular openings become larger, making the valves insufficient to properly guard them, and permit regurgitations; the result is engorgement of the organs of the body.

Symptoms.—The dilatation depends upon the weakness of the muscular fibres forming the heart walls and upon the increase in the endocardial pressure. There is a lack of motor function in the muscle of the heart which, with the added increase in endocardial pressure, results in its stretching.

Dilatation of the heart is manifested by dyspnoea upon exertion, cyanosis, precordial oppression, attacks of palpitation, tachycardia, and the pulse is also weak and easily compressible.

The apex beat is displaced downward and to the left, but is weak, and the area of visible pulsation is small. The enlargement may be so great that pressure symptoms arise from pressure upon the lungs, esophagus and large vessels. Soon venous stasis, with dropsy, appears, and the termination is fatal.

Under adjustments the normal amount of motor impulses reach the heart, which, when expressed as function, give to the muscular fibres added strength and tonicity, so that it is equal to the work which it is called upon to do. When the cardiac muscles regain normal tonicity the heart returns to normal size, and all symptoms subside.

FATTY HEART.

There are two varities of fatty heart—fatty degeneration and fatty infiltration.

Fatty degeneration is an abnormal condition of the heart in which there is interference with the metabolism of the organ, and a conversion of its muscular tissue into an oily substance.

Pathology.—In fatty degeneration the muscular fibres of the heart walls undergo changes, the principal of which is the transformation of its muscular elements into fat and oil globules. This change may affect the entire organ or any one of its walls.

Symptoms.—The action of the heart is slow, feeble and irregular. The pulse is easily compressible, there is dyspnoea upon slight exertion; localized anemia is common, on account of the inability of the heart to properly force the blood through the arteries and maintain normal circulation. Cheyne-Stokes respiration is common, cardiac asthma, angina pectoris, palpitation and finally the signs of dilatation occur because of the loss of muscular elasticity by the degenerative change that has taken place. There are symptoms of general impaired nutrition, as is manifested by pallor of the skin, general weakness, emaciation and syncope from ischemia of the brain.

Fatty infiltration of the heart is a condition in which there is a deposit of fat upon the myocardium, or between the muscular fibres.

It is not always considered pathological, as the fat is of normal consistency and is usually found in obesity.

Its symptoms consist of palpitation upon exertion or excitement, precordial bulging in the young, shortness of breath, feeble pulse, weakness of the cardiac muscle and a resulting dilatation. But few symptoms appear until dilatation occurs. The early symptoms are due to the enlarged heart working in close quarters, and are usually aggravated after eating a hearty meal, in which case the diaphragm cannot be lowered, thus crowding the heart.

ACUTE MYOCARDITIS.

Definition.—This is also known as carditis and is an inflammation or excessive heat of the muscular tissue of the heart. The inflammation may be suppurative or non-suppurative.

Adjustment.—H. P. Should always be adjusted, and if of the suppurative type K. P. should be adjusted in combination.

Pathology.—In case the inflammation is simple the excessive heat results only in hyperemia of the cardiac vessels, swelling of the muscle and an infiltration of the serum into the muscle. If it should be suppurative, there is in addition to the above a suppuration or decomposition of the infiltrated serum, transforming it into pus, which may collect, forming an abscess, and this may rapidly be fatal, or may result in aneurism of the heart. If the pus is absorbed from the abscess, scar tissue is formed.

Symptoms.—Acute myocarditis occurs with rare frequency as a primary condition, and if so the symptoms are of short duration. It most frequently is associated with pyemia, septicemia, or a severe case of typhoid. There is severe cardiac pain, which is continuous, a feeble pulse, which is also rapid and irregular, fever, which may be remittent or intermittent, cardiac asthma, and the signs of collapse, consisting of a rapid, feeble pulse at the onset of the collapse, anxious expression of the face, pallor of the skin, a marked drop in the temperature, cold perspiration on the skin, quick, shallow breathing, apex beat becomes imperceptible, finally the heart entirely fails and death is the result.

CHRONIC MYOCARDITIS.

Definition.—A slow, chronic inflammation of the cardiac muscle, in which there is a gradual thickening and hardening of the heart walls, characterized by shortness of breath, precordial pain and disordered circulation.

Adjustment.—H. P.

Pathology.—The structural changes of chronic myocarditis may be limited to the walls of one cavity or the entire organ may be affected. There is an overgrowth of connective tissue and a growth of new fibrous tissue, which renders the muscle hard and inelastic. This hardening may extend so as to involve the valves, making them non-flexible, and resulting in valvular incompetency. Preceding the de-

velopment of this fibrous hyperplasia there may be the pathological condition of acute, simple myocarditis, the acute merging into the chronic.

Symptoms.—During the earlier stages of the trouble few or no symptoms may be noticeable, but as soon as any extra effort is made upon the heart, then there is short breath, palpitation, irregular pulse, attacks of angina and vertigo. The pulse rate may be decreased in frequency and there may be a sense of constriction in the chest. Syncope may occur suddenly without any premonitory symptoms. As the fibrous over-growth increases the symptoms are intensified. Later there is progressive emaciation and debility, with disturbed digestion and function of all organs. Finally dilatation occurs, with its attending symptoms.

THE CARDIAC NEUROSES.

A neurosis is a functional disturbance without the existence of a pathological condition, or in which the pathology is not observable.

There are five cardiac neuroses—palpitation, bradycardia, tachycardia, angina pectoris and arrythmia.

Palpitation is an irregular and fast beating of the heart, of which the individual is uncomfortably conscious.

Symptoms of Palpitation.—The onset is usually sudden, following some undue excitement or over-exercise, or may occur suddenly without any premonitory excitement. It begins with pain in the region of the heart and a fast, forcible beating, giving rise to a forcible impulse that can be seen through the clothes. There may be vertigo, flashes of light before the eyes, an expression of fear upon the face and a sense of impending danger or death. The patient has to assume the upright position to facilitate respiration. The duration of the attack may be from a few seconds to several hours, after which the patient is usually exhausted and sinks into a sleep. Palpitation frequently occurs as a symptom

of some other effect, and is only considered as a neurosis when there is no accompanying pathological condition. It is caused by a subluxation at H. P., and, as a rule, yields very readily to adjustments. Several cases are on record that have recovered after a single adjustment at H. P. The palpitation is merely a manifestation of the inability of the heart to properly carry on its work, which is all caused by the H. P. subluxation impinging the nerves leading to the heart.

Tachycardia.—Is neurosis of the heart, characterized by periodical fast beating of the heart. The heart's action must be increased to 150 beats per minute before it is considered tachycardia.

Adjustment.—H. P.

Symptoms.—In many cases there are no subjective symptoms, and the condition can only be recognized by a count of the pulse. If its rate exceeds 150 beats per minute, the name tachycardia is applied.

Some cases have premonitory symptoms of dizziness, tinitus or fear of impending danger, followed by a fast beating of the heart, with pulsation of the carotids, pallor of the face, which soon becomes flushed, and slight increase in the respiratory rate. Dyspnoea is rarely a symptom, though there may be a sense of constriction in the chest. The duration may be short, lasting only a few minutes, or it may endure for several days with periods of partial rest. The pulse is small, rapid, weak and easily compressible.

Bradycardia.—A neurosis of the heart in which its action is periodically or permanently slowed. Bradycardia begins when the heart's action is reduced to forty beats per minute.

Adjustment.—H. P.

Symptoms.—This is a frequent symptom of chronic myocarditis and fatty heart, and in such cases is considered

as a symptom and not a neurosis. The pulse is weak, small and slow. As a result of this slow action there may be attacks of fainting from cerebral ischemia, noises in the head, dizziness, and sometimes convulsions. The pulse rate may vary from 40 to 8 beats per minute. Often terminates in sudden death.

Arrhythmia.—This is an irregularity of the heart's pulsations, or a lack of cardiac rhythm.

Adjustment.—H. P.

Symptoms.—This is but rarely a neurosis, but usually a symptom of some valvular defect when compensation is lost. It is characterized by an irregular or an intermittent pulse. When irregular it may be a symptom of palpitation of the heart, dilatation of the left ventricle, or aortic disease. When intermittent it is always a sign of ineffectual systole of the left ventricle, as is commonly present in severe cases of mitral incompetency when compensation is being or is lost. It can be determined only by taking the pulse.

Angina Pectoris.—A paroxysmal severe pain of sudden onset, occurring in the region of the heart and radiating down into the left arm and left side of the neck.

Adjustment.—H. P.

Symptoms.—Angina pectoris may have a pathological condition, and when so it consists of sclerosis of the coronary arteries, which prevents the blood supply to the heart muscle. This is caused by an H. P. subluxation impinging the nerves leading to the arteries of the heart. This begins suddenly without any prodromal symptoms. A severe pain begins in the region of the heart, which is agonizing to the patient, and radiates in a circular manner upward along the left side of the neck and downward into the left arm and hand. During the paroxysm of pain the respiratory muscles are fixed, the face becomes cyanosed and has an anxious expression, and the patient fears impending death, which frequently occurs suddenly.

Cases that survive are extremely depressed and prostrated from the attack, which is usually of but a few seconds duration. There may be voiding of large quantities of pale urine, and the patient may express a feeling of coldness. Future attacks may occur, and usually do in cases where there is any sclerosis of the coronary arteries, should the patient survive the first attack. Adjustment at H. P. would restore the condition to normal, thus preventing subsequent and possibly fatal recurrences.

DISEASES OF THE ARTERIES.

ARTERIOSCLEROSIS.

Definition.—Is a chronic inflammatory depletion of the vascular system, in which there is a thickening and hardening of the vessel walls and sometimes followed by a calcareous deposit. It is properly termed arteriosclerosis when the arteries alone are affected. When the veins are affected by the depletion it is called phlebosclerosis; when the arteries and capillaries are affected it is called arteriocapillary fibrosis, and when all the vessels are affected it is properly termed angiosclerosis.

Adjustment.—This depends largely upon whether the sclerosis is general or localized in the arteries of one organ, in which event the adjustment will be local to that organ. In all cases K. P. should be adjusted.

Pathology.—The change in the vessel wall is inflammatory in character and begins with a hyperaemia of the vasa vassorum in the tunica intima, this is followed by an irregular thickening of the intima, due to proliferation of the connective tissue. There may be calcification of the vessel walls, rendering it a stiff, hard tube, void of elasticity, thus hindering the propulsion of the blood current and raising the arterial pressure. The intima is often increased to four times its normal thickness, and with the great unevenness of

the thickening may obliterate the lumen of the vessel, producing a condition of thrombosis.

Symptoms.—The condition may be limited to a single vessel and the symptoms are more marked in that part. The aorta is most frequently the site of arteriosclerosis, but the splenic, femoral and coronary arteries are also frequently affected. There are frequent attacks of vertigo or dizziness when the vessels leading to the brain are affected. If the superficial arteries are affected they feel hard or bony upon palpation, and are sometimes called the "whip cord" arteries. The pulse is slow and is known as the pulsus tardus. The blood pressure is high, because of the increase in the peripheral resistance to the onward flow of blood; this throws greater strain upon the walls of the left ventricle, and in time effects its hypertrophy with its attending symptoms.

There may be thoracic oppression, dyspnoea upon exertion, angina pectoris, frequently vertigo and fainting spells, and later the indications of dilatation.

Arteriosclerosis is frequently associated with alcoholism and syphilis, and is explained as follows: In ever case of syphilis there is thickening and hardening of the connective tissue of the organ in which it becomes localized; in other words, syphilis is a proliferation of connective tissue. This occurs when it becomes localized in the spinal cord, as in locomotor ataxia, as in the brain in dementia paralytica, in the liver in cirrhosis, etc. So when syphilis becomes localized in the arteries the condition produced is the same as in arteriosclerosis, and may be so named.

Alcohol will harden tissue, as can be plainly seen in pouring some over the white of an egg and letting stand for a time. If alcohol is constantly taken into the system, and the excretory system is not working at the maximum, a part of the alcohol remains in the circulations of the body. The greater part of the fluid of the body passes through the blood vessels; hence the tunica intima of the vessels is constantly being bathed in this fluid containing alcohol, and its

prolonged effect is such as to produce the hardening known as arteriosclerosis. However, should the proper adjustment be made at K. P., whereby the elimination of the impurities will be increased, the alcohol will be eliminated before it could have this derogative effect upon the delicate tissues. Arteriosclerosis does exist without either alcoholism or syphilis, and has been entirely obliterated by adjustments.

ANEURISM.

A True Aneurism is a localized or circumscribed dilatation of an artery, the sac thus formed consisting of one or more layers of the vessel wall.

A Dissecting Aneurism is one in which the tunica intima is ruptured and the blood forces itself between the layers of the vessel wall.

A False Aneurism is a circumscribed collection of blood outside of the vessel, having communication with the blood within the vessel, and is the result of a rupture of the vessel walls.

An Arterio-Venous Aneurism is an abnormal communication between an artery and a vein.

Aneurism most frequently affects the aorta, and may affect the ascending arch, the thoracic or the abdominal aorta

Adjustment.—This will be local, depending upon the location of the dilatation. If of the arch, the adjustment will be H. P.

Pathology.—Because of the lack of motor function expressed in the muscular fibres of the artery wall, they become relaxed and stretched and the vessel becomes dilated. The dilatation may be cylindrical, fusiform or sacculated in shape. The size of the dilated sac may vary greatly from that of a walnut to the size of an orange, or even larger.

Symptoms.—Thoracic Aneurism.—The symptoms depend upon the size and position of the aneurismal tumor. So long as it is small and does not press upon other organs no symptoms will appear, but as soon as it attains sufficient size to produce pressure symptoms there will be pain, which is localized at the point of the aneurism, and may be of a circling character; dyspnoea may be produced from pressure upon the trachea or bronchi, dysphagia from pressure upon the esophagus, and aphonia from pressure upon the inferior laryngeal nerve. There may be cough, rapid respiration, deficient expansion of the lungs and the heart may be displaced. Thoracic aneursim most frequently affects the ascending arch, and when large may affect the aortic valve, producing incompetency, as the orifice may be involved in dilatation.

Abdominal Aorta.—There is pain corresponding to the location of the aneurism, which is increased upon exertion. The pressure retards the force of the pulse in the femoral artery, and pressure upon abdominal viscera will produce symptoms referable to those organs. There may be a large area of visible pulsation, especially in thin individuals, and upon visceral palpation a pulsating tumor can be felt. The heart's action is irregular, the general health is impaired and death may occur suddenly from rupture of the stretched wall. When rupture occurs the blood forces itself between the minute muscular fibres because of their extreme relaxation, due to lack of motor impulses from the brain, giving it tonicity. The adjustment permits the normal flow of motor impulses to the muscular fibres, giving them elasticity and tonicity, so that the dilatation gradually diminishes until normal elasticity is established.

SECTION VII.

DISEASES OF THE BLOOD AND DUCTLESS GLANDS.

ANAEMIA.

Definition.—A condition in which there is a lack of red corpuscles, or a lack of haemoglobin in the red corpuscles, or where there is a disproportionate amount of serum to the quantity of haemoglobin and corpuscles, or it may be a reduction in the total amount of the blood. It may be defined as an abnormal quantity or quality of the blood.

Etiology.—Anaemia may be primary or secondary. Primary anaemia is always the result of depraved nutrition, which is caused by subluxations affecting the various digestive organs, or at K. P. It may be that the liver, stomach, pancreas or intestines are improperly digesting the food, so that it is not in a state that it can be utilized by the body, or cannot be assimilated. It may be that the excretory apparatus is acting improperly, the metabolistic poisons are not being eliminated, but are being retained, and when present in the body prevent normal metabolism and growth. Therefore, in primary anaemia the adjustment may be K. P. with Li. P., S. P., L. S. P., or P. P.

Secondary anaemia is the result of a condition which deprives the blood of any of its ingredients or diminishes its amount in the body.

Adjustment, if secondary, will depend upon the condition to which it is secondary.

Symptoms of Secondary Anaemia.—History of condition to which anaemia is secondary—paleness of the skin, weakness and possibly vertigo and syncope. This may be the

result of a profuse hemorrhage in which the total amount of blood in the body is greatly lessened, or it may be the result of some ulcerative condition in which pus and toxines are being absorbed into the circulation. Secondary anaemia may be the result of cancer or syphilis, and in such cases is spoken of as cancerous cachexia or syphilitic cachexia. In either of the latter there is disentegration of the red cells and malnutrition of the entire body.

PRIMARY ANAEMIA.

There are two varieties of primary anaemia, chlorosis or chloro-anaemia and progressive pernicious anaemia.

CHLOROSIS OR CHLORO-ANAEMIA.

Definition.—A form of primary anaemia in which there is a marked decrease in the amount of haemoglobin in the red cells of blood. It is also called the green sickness.

Pathology.—Chlorosis is usually met with in girls about the age of puberty and is often associated with amenorrhea. The amount of the haemoglobin in the red cells is greatly diminished, often to twenty per cent of the normal, rendering the skin pale. The red cells are about normal in number, as are the white ones.

Symptoms.—The symptoms of chlorosis usually develop very slowly and are often first noticeable when there is some menstrual disturbance, such as menorrhagia or amenorrhea. It will be noticed that there is a change in the disposition of the girl; those who have been previously quiet, sensible and jolly now become melancholic, despondent and fretful. The complexion becomes pale, noticeable in the blonds as the skin becomes pale, waxy and puffy without any edematous swelling. The brunettes assume a dark, muddy color and have dark circles around their eyes. As a rule the patient does not become emaciated, but in rare cases the emaciation is extreme. There are weakness and fatigue, rapid respiration, nearly always constipation, cold hands and feet, and

a rapid and feeble pulse. Blood examination shows a decrease in the amount of the haemoglobin which makes the blood paler than normal.

PROGRESSIVE PERNICIOUS ANAEMIA.

Definition.—A malignant form of primary anaemia, progressive in its course, characterized by a decrease in the number of erythrocytes and a terminal fever.

Adjustment.—See Anaemia.

Pathology.—The number of red blood cells is markedly decreased in number, sometimes being as low as 500,000 per cubic millimeter, while the normal count is about 4,500,000.

This gives to the blood a pale color, although the haemoglobin may be relatively increased. The blood coagulates very slowly and imperfectly. There is no increase in the number of white cells. Various pathological forms of cells may appear upon microscopic examination. The most common of these is normoblasts, microblasts, megaloblasts, microcytes and megalocytes. Of these the megaloblasts are a grave indication, while if macroblasts are found it is a good indication. Macroblasts indicate recovery, or indicate that there is constructive metabolism going on within the body.

Symptoms.—The onset is insidious with fatigue and languor, which increases and becomes extreme. The countenance becomes pale and the whites of the eyes pearly. Respiration is frequent and dyspnoea occurs upon slight exertion. Weakness becomes extreme so that the patient is unable to continue his occupation, still suffers no pain or other discomfort. The general frame becomes bulky rather than emaciated, but this is not normal flesh. There are anorexia, nausea and spells of vomiting. Diarrhoea may be a symptom. The blood coagulates slowly and there may be small petechial hemorrhages scattered over the skin. Menstruation may cease, so as to conserve the limited supply of red blood cells. The mucous membranes of the mouth

are pale and bloodless, the tongue is pale, the muscles become flabby, fever appears and the mentality becomes impaired. The analysis depends upon the microscopical examination of the blood.

LEUKEMIA.

Definition.—An abnormal condition of the blood in which there is a great increase in the number of white blood corpuscles, enlargement of the spleen, lymphatic glands and sometimes the bone marrow.

Adjustment.—This is an abnormal expression of the function of nutrition, and may be caused by the same subluxations as in anaemia, viz., Li. P., S. P., K. P., and P. P.

Pathology.—First the blood is paler than normal, there is a great increase in its leucocytes and its specific gravity is reduced to 1.040 or lower. The spleen is immensely increased in size, density and firmness, all of which is produced by a hyperplasia of the lymphoid tissue of the organ. Adhesions may occur around the spleen and lymphoid tumors may project from it. The lymphatic glands all over the body, but especially those of the groin and neck, become enlarged and hard; there is more or less enlargement of all the glands of the body. The bone marrow undergoes changes of hypertrophy and degeneration, is yellowish in color, and the normal marrow fat disappears. When the changes are limited to the spleen and bone marrow it is called the spleno-medullary form; and when the changes are limited to the spleen and lymph glands it is called the lympathic form.

Symptoms.—The onset is very slow and the condition progresses gradually, with a palpable swelling of the abdomen; this is produced by the splenic enlargement and may become so great as to produce great discomfort by pressing upward against the diaphragm, thus hindering breathing, or by pressing against the other abdominal viscera affecting the normal function of the organs pressed upon. Following

the enlargement of the spleen the lymphatic glands begin to increase in size. This glandular enlargement is first noticeable in the cervical, then the inguinal, and later in the axillary region. The glands are enlarged, hard and freely movable at the beginning, but soon coalesce forming hard masses. The enlargement may be so great as to obliterate the neck and cause the head to appear of a pyramidal shape. When the bone marrow undergoes tumefaction there appears upon the shaft of the long bones nodules from the increased pressure upon the periosteum.

In all varieties there is emaciation, weakness, loss of appetite, feeble pulse, rapid and shallow respiration and impaired digestion, often with diarrhoea.

The blood coagulates slowly, and is of a pale, watery consistency. Microscopical examination of the blood reveals an enormous increase in the number of white cells; in extreme cases they may number as many as the red cells. Nearly all kinds of leucocytes can be found in the blood. Finally the red cells are diminished and anaemia may develop.

PSEUDO-LEUKEMIA. (Hodgson's Disease)

Definition.—This is also known as Hodgson's disease, and is a malignant disease of long duration, characterized by excessive hypertrophy of the glands of various parts of the body and is associated with a terminal anaemia.

Adjustment.—C. P., K. P., and same as leukemia.

Pathology.—In the great majority of cases the spleen is enlarged from an increase in its functioning cells. The bone marrow is converted into a rich lymphoid tissue and there is enlargement of the lymphatic glands of the body. This hyperplasia may affect one gland only, but usually affects several groups of glands, such as the cervical, axillary, inguinal and femoral. Blood examination shows the red cells slightly diminished and the white cells in about the normal proportion. The liver is also enlarged in about two-

thirds of the cases, and similar enlargement may involve the kidneys and pancreas.

Symptoms.—The onset is very slow, but the first symptoms to attract the attention of the patient is the enlargement of the cervical glands. This may be followed by an enlargement of the axillary and inguinal glands in the order named, and finally the lymphatic glands of the entire body undergo the enlargement.

At the beginning of the enlargement the glands are hard but freely movable beneath the skin; later they fuse together in large masses by adhesions and are immovable. The massive enlargement of the cervical glands may be so great as to obliterate the neck, giving to the head a pyramidal shape. Dyspnoea may arise from pressure upon the trachea or larynx; dysphagia from pressure upon the esophagus, aphonia from pressure upon the recurrent laryngeal nerve, and local edema of the face and upper extremities from pressure upon the superficial veins draining those parts. The spleen is immensely hypertrophied, interferès with respiration, and may press upon other abdominal viscera. The apex beat of the heart may be slightly displaced. Suppuration or necrosis may occur in the gland. If the quantity of pus formed is small it may be absorbed and eliminated through the kidneys, but if the quantity is large a fissure or sinus may form through which the pus will be discharged as it forms. Later the tonsils enlarge and adenoid growths appear in the throat and may press upon the eustachian tube, producing deafness. The mucous membrane of the throat may become raw and be the site of ulcerations, with purulent expectoration and offensive breath.

As the disease progresses the haemoglobin is diminished and a severe anemia develops. The white cells are still about the normal, or may be slightly increased. This latter symptom differentiates Hodgson's disease from true leukemia. The duration of the affection is from months to several years, and is a very rare disease.

PURPURA

Definition.—An acute condition characterized by the appearance of livid spots beneath the skin, from extravasated blood, a hemorrhage into the cutis. Also called the purple disease.

Adjustment.—Always local in the zone of the hemorrhage, and if fever is present, also adjust C. P. and K. P.

Pathology.—The local subluxation produces pressure upon the motor nerves leading to muscle fibres of the vessel wall at the point where the hemorrhage occurs. This makes a lack of motor power in the muscular fibres and permits them to relax and slightly separate, permitting the blood to slowly ooze between the fibres into the adjacent subcutaneous areolar tissue. At first the spot beneath the skin is red, but as soon as the red cells lose their oxygen it becomes dark in color and of a purple tint. If the hemorrhage is small it is called petechia, and if large and diffuse it is called ecchymosis.

Symptoms.—There are three varieties of purpura—simple or symptomatic purpura, hemorrhagic purpura and purpura neonatorum or purpura of the new born.

In the simple type there is the appearance of minute petechial spots or capillary hemorrhages beneath the skin, which may be local or general and may gradually increase in size until called ecchymosis. This is associated with slight malaise, lassitude, fever and its attending symptoms, and aching pains in the limbs or other parts that may be affected. This simple variety is only a symptom of some other incoordination, such as scurvy, anaemia, or febrile diseases, as dengue or spinal meningitis. In such cases the adjustment is given for the condition for which the purpura is a symptom, and not for the purpura.

Hemorrhagic purpura is a very severe and often grave form. Begins with the symptoms of the simple type, but the area of hemorrhage constantly increases. Soon a large part

of the body is covered with a diffuse ecchymosis. A constant oozing of blood from the mucous membranes of the body occurs, so that the stool, urine, and expectoration are all blood stained. Epistaxis is common in these cases. There are moderate fever, great weakness and depression. The severe cases of this form of purpura are identical with hemophilia.

Purpura neonatorum or purpura of the new born usually occurs in connection with congenital syphilis. If such is the case there will be evidences of syphilis with a hemorrhage from the mucous membranes and beneath the skin. When hemorrhages occur from the mucous membrane of the bladder, ureter or kidney it produces hematuria; if from the lungs or bronchi it produces hemoptysis, and if from the stomach it produces hematemesis or malena. Very frequently the palate and gums are the location of the ulceration and hemorrhages.

HEMOPHILIA.

Definition.—An incoordination in which there is an extreme disposition to bleed upon the most trivial injury or in which there are spontaneous hemorrhages.

Adjustment.—Atlas, K. P. and local, if the hemorrhages are confined to a local zone.

Pathology.—This may consist of a weakness in the blood vessel walls in which the muscle fibres are relaxed and slightly separated, and this condition permits the hemorrhage. There may also be an abnormal state of the blood in which the fibrin forming ferment is deficient, so that when bleeding occurs coagulation is retarded.

Symptoms.—There is uncontrolable bleeding upon very slight injury, producing a secondary anaemia with paleness of the skin and weakness. The hemorrhages may occur spontaneously from the mucous membranes or beneath the skin, producing purpura. The hemorrhages most frequently

occur from the mucous membrane of the mouth, nose, lungs, stomach, intestines and bladder. They may occur in the joints and, when such is the case, are attended with severe pain and swelling. Coagulation is greatly retarded, often requiring from fifteen to forty-five minutes for a slight hemorrhage to stop, while under normal circumstances coagulation will occur in three to five minutes. The amount of fibrin in the blood is diminished. These hemorrhages are sometimes encountered during parturition, and may be fatal.

SCURVY.

Definition.—An incoordination, characterized by great debility, anaemia, a spongy condition of the gums and a tendency to hemorrhage.

Adjustment.—C. P., S. P., and K. P.

Pathology.—In the infantile form there is subperiosteal hemorrhages. In both forms there is sponginess of the gums and possibly ulcerations. The potassium salts are diminished, the blood is dark in color and very thin. The vessel walls are weak and relaxed, and there may be a general anaemia with a decrease in the erythrocytes.

Symptoms.—Infantile Form.—While the child is left alone he will remain quiet, but as soon as he is handled he will cry, and especially so when the legs are moved. There is severe pain in the legs, which is produced by a hemorrhage beneath the periosteum and is soon marked by an observable swelling on the shaft of the bones. This swelling most frequently arises upon the anterior part of the shaft of the tibia; sometimes spontaneous fractures may occur between the epiphysis and shaft of the upper end of the tibia, fibula, or lower end of the femur, and is marked by crepitus upon movement of the legs. The child lies without moving, in a state of pseudo-paralysis, with weakness in the spine, deformities of the thorax and protrusion of the eyeball.

Following the proptosis, small subjunctival petechia appears, and later petechial spots appear over the entire body.

The gums become spongy, bleed easily, and often the teeth fall out. Later a cachexia or aneamia develops, a slight irregular temperature arises and there is great debility. Under proper adjustments and eating of the food demanded by the natural appetite, the child rapidly recovers. The patient rarely dies.

Adult Scurvy.—If there is the existance of vertebral subluxations which affect the working of the digestive system so that the food given cannot be properly prepared for absorption, and in addition, should there be an absence of certain ingredients in the food found in vegetables and that are demanded by the appetite, these symptoms will appear. The earliest symptoms are weakness, loss of flesh and pallor of the skin. This is followed by sponginess of the gums, they bleeding easily and the teeth become loose and frequently fall out. The breath has a foul odor, the tongue is coated and the appetite is impaired. The skin becomes dry, rough and scaly. Ecchymoses appear under the skin and nodes are formed upon the shaft of the long bones. Respiration and the heart's action are irregular and there may be a fever of 102 degrees.

The joints are frequently affected and are painfully swollen. There may be edema of the face and ankles, the urine is scanty and highly colored, and may contain blood.

Under adjustments the normal amount of mental impulses reach the organs of the digestive system, giving to them normal function, thus giving them power to normally digest the food that is eaten, and also giving to the stomach a normal appetite so that it may call for the kind and quantity of food that is needed for the proper nutrition of the body to overcome this abnormal condition. Adult scurvy is rarely found except in cases where food is deficient in quantity and quality.

ADDISON'S DISEASE.

Definition.—An incoordination characterized by asthenia, depressed circulation, irritability of the stomach, and pig-

mentation of the skin. Commonly called suprarenal cachexia or the bronzed-skin disease.

Adjustment.—K. P.

Pathology.—The pathology of Addison's disease is localized in the suprarenal capsules and is usually tuberculosis of the glands. The tubercles form on the endothelium of the arterioles and parenchyma of the gland, increasing in number and coalescing to form tubercular nodules in which occurs caseation. The tubercles have the same histological consistency as in tuberculosis of the lungs.

Nerve-Tracing.—Tenderness can be found upon palpation, leading from the seventeenth intervertebral foramen becoming diffuse over the region of the kidney.

Symptoms.—The onset of the incoordination is very slow, with a sense of weakness which progressively increases, with anorexia, indigestion, dyspnoea, muscular weakness, palpitation of the heart and excessive drowsiness. The symptoms may be classed into three groups, as follows: Pigmentation of the skin, gastro-intestinal disturbances and asthenia or weakness.

Asthenia or weakness is the first symptom present, but may not be recognized until the pigmentation of the skin appears. The languor gradually increases until the patient feels unable to carry on his work. This muscular weakness is due to the loss of function of the suprarenal glands, as they secrete an internal secretion which has to do with the muscular tonicity of the body. The voluntary and involuntary muscles are alike, hence dilatation of the blood vessels occurs, which slows the velocity of the blood. The skeletal muscles become flabby, the heart weak and cardiac edema may result.

The pigmentation of the skin is the first symptom to attract marked attention, and at first is of a light yellowish tint but soon becomes dark brown or bronze color. There are usually patches of leucoderma or white skin present

around the neck, hands or head. The mucous membranes of the body are similarly affected.

The digestive disturbances are more or less present throughout the entire duration of the disease. They consist principally of anorexia, at times nausea and vomiting, diarrhoea and indigestion. The abdominal muscles are frequently contracted. The usual duration of the affection is one to two years.

DISEASES OF THE SPLEEN.

SPLENOPTOSIS.

Definition.—A lack of motor function in the structures holding the spleen in situe, bringing about a relaxation of the structures and permitting a displacement of the organ.

Etiology.—This is caused by a subluxation of the ninth dorsal vertebra, which impinges the motor nerves leading to the ligaments of the spleen. As a result of the lack of motor function the ligaments become relaxed, stretched and the weight of the organ causes it to descend in the abdominal cavity.

Nerve-Tracing.—Tenderness may be traced from the sixteenth intervertebral foramen on the left side, passing below the angle of the scapula to the left hypochondriac region or to the left renal region over the spleen.

Symptoms.—If the organ is not enlarged and the degree of movability is slight no symptoms will arise, and the displacement can only be recognized upon physical examination of the patient. Usually the spleen is enlarged, and when such is the case a noticeable distention of the abdomen on the left side may be seen. There is a dull bearing-down pain in the left side from pressure upon other abdominal viscera. Sensations of bearing down and weight in the left side. Upon palpation the spleen can be located, and upon percussion the area of splenic dullness is increased.

RUPTURE OF THE SPLEEN.

Definition.—A condition in which the tissues of the spleen become separated and its vessels ruptured, thus permitting the escape of blood into the abdominal cavity.

Adjustment.—Ninth dorsal vertebra.

Pathology.—Rupture of the spleen may be pathologic or traumatic. When traumatic the fibres of the vessel walls may be torn, permitting the intra abdominal hemorrhage. When pathologic it may occur as the result of various pathological conditions in which there is erosion of the tissue, including the vessel walls, or it may be in case of extreme hyperemia in which the degree of relaxation is so great as to permit the flow of blood from the vessels into the abdominal cavity.

Symptoms.—The symptoms are those of concealed hemorrhage, beginning with pain in the region of the spleen and great restlessness with turning of the body from side to side and hunger for fresh air. The face becomes pale, pinched and anxious, the extermities are cold and the body is covered with cold sweat. The respirations are hurried, shallow and sighing. The radial pulse is rapid at first, weak and irregular, finally becoming imperceptible. The mind is usually clear but there may be delirium, and if the hemorrhage is large there may be syncope. Nausea and vomiting may take place. The heart beats violently at the onset because of the undue excitement and fear of impending death, but rapidly becomes feeble and finally stops. If the hemorrhage occurs during a febrile period the fever falls rapidly to subnormal.

SPLENIC ANEMIA.

Definition.—This is also known as Banti's disease, and is a form of simple anemia associated with enlargement of the spleen.

Adjustment.—Spl. P., K. P., and local for digestive disturbances.

Pathology.—This consists principally of an enlargement of the spleen in which there is a hyperplasia of the reticulum or interstitial tissue of the organ which replaces and destroys the lymphoid tissue. There is a decrease in the number of red cells and haemoglobin and a slight increase in the number of white cells. Microscopical examination of the blood also reveals the presence of pathological red cells, such as the microcytes, megalocytes and various nucleated cells.

Symptoms.—This begins insidiously with sensations of weight and bearing down in the left side of the abdomen followed by distention of the abdominal walls. The spleen can be felt upon abdominal palpation, and is found to be enlarged and hardened. Later pigmented spots will appear upon the skin and there may be the presence of symptomatic purpura, ascites, pallor of the skin, and a profound anemia soon develops. The increase of white cells, if present, is always small and the other lymphatic glands do not enlarge. The cardinal symptoms are, splenic enlargement with anemia and no other lymphatic enlargement.

SIMPLE GOITRE.

Definition.—An incoordination in which there is an excessive increase in the bulk of the thyroid gland.

Etiology.—Subluxations at lower cervical, usually 6th, and S. P., but K. P. should be included in the adjustment.

Pathology.—This usually consists of an overgrowth of the tissue of the thyroid gland from an increase in the cells of the glandular structure itself. If the increase is in the reticulum or connective tissue it is called fibroid goitre. The swelling may be edematous, and then is called edema of the gland, and is not a true goitre. Vascular goitre is an engorgement of the vessels of the thyroid gland because of dilatation of the vessel walls. Cystic goitre is an accumulation of fluid in a space in the gland.

Nerve-Tracing.—Tenderness is traceable from the sixth intervertebral foramen on either side, passing outward and becoming diffuse over the region of the gland. Tenderness may also be traceable from S. P. on the right side passing out beneath the scapula and axilla and traceable upward over the chest, under the clavicle to the region of the thyroid gland.

Symptoms.—Goitre may be unilateral or bilateral, and the enlargement may be evenly or unevenly distributed over the gland. The enlargement is the first noticeable symptom and may not be sufficient to produce pressure symptoms, such as dyspnoea from pressure upon the trachea, dysphagia from pressure upon the esophagus, and aphonia from pressure upon the larynx or inferior laryngeal nerve. The size of the goitre may vary greatly, according to its duration and form. Fibroid goitres usually attain the largest size, the bulk of the goitre equalling that of the head in extreme cases. Cases are on record in which the circumference of the neck has diminished five inches during a period of three months adjustments. Vascular goitre usually disappears readily under adjustments; in the more remarkable cases they have entirely disappeared after less than one week's adjustments. Occasionally a goitre may apparently become larger and softer after taking a few adjustments, which is a good sign, as it is more readily absorbed when soft.

EXOPHTHALMIC GOITRE.

Definition.—A general cachectic incoordination characterized by enlargement of the thyroid gland and protrusion of the eyeballs.

Etiology.—Exophthalmic goitre is caused by subluxations at lower cervical, usually sixth, and S. P. Kidney place should be included in the adjustment. The atlas should always be carefully palpated, as it may be an important etiologic factor in this affection.

Pathology.—This consists of a hypertrophy of the gland and often a dilatation of the vessels of the thyroid gland, producing stasis of blood and allowing an infiltration of serum into the adjacent tissue. The vessels behind the eyeball also undergo a similar change and the fat is markedly increased in quantity. In the late stages of the disease there is a brownish pigmentation of the skin with anemia and dropsy.

Symptoms.—This is also known as Grove's disease, Basedow's disease and Parry's disease. The onset of the symptoms is usually gradual and the circulatory symptoms are the first to appear. These usually consist of palpitation and tachycardia. The pulse rate may vary from 100 to nearly 200, the rapid pulse occurring in paroxysms and often follow excitement or exertion. There may be visible pulsation of the vessels in the neck, and the patient may experience ringing in the ears from the forcible cardiac action.

The next symptom to make its appearance is the enlargement of the gland, and in exophthalmic goitre this is usually small and is largely confined to the inner surface of the gland, hence is called inward goitre. The enlargement is confined to one side of the gland in some cases, but usually is evenly distributed over the entire gland.

The exophthalmos begins with inability to rotate the eyeball in following a moving object. The inability of the patient to rotate the eyeball necessitates turning of the head in watching a moving object. It can be noticed that the lids do not properly cover the eyeball when the eyes are closed. The eyeball bulges forward and gives to the face a staring expression. Tremor is usually the latest symptom to appear, and is absent in some cases. Very rarely it is the first symptom to appear, and is characterized by nervousness, irritability, inability to carry food to the mouth without spilling, and may terminate with general tremor. In addition to the foregoing symptoms there may be headache, insomnia and irritability of temper, attacks of despondency and pressure symptoms, as found in simple goitre. Late in

the disease brownish spots appear upon the skin and general anemia develops.

MYXEDEMA.

Definition.—An abnormal condition in which there is a deficiency in the thyroid secretion and an atrophy of the gland.

Adjustment.—Lower cervical, S. P., and K. P.

Pathology.—The first and principal condition which appears is atrophy of the thyroid gland, which is followed by the development of cachexia and a deposit of a gelatinous substance in the subcutaneous areolar tissues, giving to the skin a hard inelastic consistency.

When occurring in infants it is known as cretinism.

Symptoms.—Cretinism.—At birth the child may appear normal but during the early months of its life it will be noticed that its bodily development is impaired, and in some cases the body does not develop symmetrically. The head may be abnormally large or small, the fontenals fail to ossify, the teeth appear late or may be deformed when appearing, the nose becomes broad and flat, the tongue is excessively large and may hang from the mouth, the eyes are situated far apart and lack the expression of intelligence. The hair is thin and dry, the skin is rough, the arms and legs may be retained in the infantile state and the child does not learn to walk, or walks imperfectly. The result is idiocy or imbecility.

Myxedema in adults is marked by an apparent swelling of the skin and an increase in the bulkiness of the body. This swelling does not pit upon pressure, which distinguishes it from dropsy. The skin is dry and rough, the hair is thin and dry, the lips thicken, the face assumes a round full-moon shape and becomes expressionless. The skeletal muscles become soft and flabby and of insufficient strength to maintain the weight of the body. The hands and feet enlarge and a

characteristic deformity of the hands occur, known as the spade hand. The skin becomes a yellowish pale color and the mentality is sluggish. The patient may finally become mentally unbalanced.

SECTION VIII.

DISEASES OF THE KIDNEY.

NEPHROPTOSIS.

Definition.—This is also known as movable kidney, or prolapsis of the kidney, and is a condition in which the structures holding the kidney in situe become relaxed and stretched, permitting the organ to drop.

Etiology.—This is caused by a subluxation at K. P. causing impingement of the motor nerves leading to the structures holding the kidney in place.

Pathology.—There being a lack of motor function expressed in the structures holding the kidney in situe, a relaxation of these structures is permitted, thus allowing the kidney to be displaced. The adipose tissue in which the kidney is imbedded is absorbed and the renal vessels are elongated. This condition most frequently occurs in lean women, and especially those having borne children.

Symptoms.—If the degree of the prolapsis is slight there may be no symptoms present. If the movability is great there is a dragging pain in the lumbar region or deeply in the abdomen. Occasionally there is severe coliky abdominal pain, with nausea, vomiting and extreme prostration. The kidneys may be palpable and nerve-tracing often reveals their exact location.

RENAL CONGESTION.

Definition.—A condition in which there is an excessive accumulation of blood in the vessels of the kidney.

Etiology.—Renal congestion is caused by a vertebral subluxation at the K. P. region, producing pressure upon the motor nerve fibres leading to the vessels of the kidney, pre-

venting a normal flow of the motor impulses and producing a relaxation of the vessel walls, thus permitting an over-abundant accumulation of blood.

Pathology.—If this congestion occurs in the arteries it is called active congestion, and if of the veins is called passive congestion. The vessel walls become stretched, inelastic and thin. In active hyperemia the redness is increased, and in the passive type the kidneys become a dark purple color. There may be associated inflammation which gives rise to a catarrhal exudate from the ducts of the pyramids.

Nerve-Tracing.—Tenderness is found radiating from K. P. to the region over the kidney. This may be localized in a small area or may be diffuse over the entire kidney.

Symptoms.—This begins with a tired, aching pain over the kidneys which intensifies after a time and radiates diagonally across the abdomen following the course of the ureters to the bladder and groin. The bladder is very irritable, marked by great frequency in urination, although the amount may be diminished. There is headache, loss of appetite and may be vomiting. The patient is weak and irritable. There may be hematuria from the slow oozing of blood through the vessel walls. The urine may contain a small amount of albumin and casts. If the hyperemia is prolonged the termination is nephritis.

UREMIA.

Definition.—An abnormal condition in which there is the retention of certain excretory substances, part of which is urea, within the body.

Etiology.—Uremia is caused by a K. P. subluxation which produces impingement upon the nerves leading to the kidney, having to do with the function of excretion or caloricity, or both.

Pathology.—Since uremia is a general condition resulting from improper activity of the kidney, there may be a

great variety of pathological conditions capable of producing the symptoms. The most common, however, is acute or chronic nephritis in which there is an excess of urea retained in the blood, because of the inability of the kidney to excrete it.

Symptoms.—This disease is also known as uremic intoxication, and uremic poisoning, and may develop gradually or suddenly. The onset in the majority of cases is slow, and begins with a decrease in the urinary secretion and the presence of edema, most noticeable in the eyelids and ankles. The characteristic renal pallor soon appears, the skin becomes dry and has a urinary odor. The patient has occipital or vertical headache, irritability of temper, nausea and vomiting, itching of the skin, and finally uremic convulsions may supervene. Occasionally these convulsions may be the first symptom to attract the attention. They vary in form, often closely simulating the convulsion of epilepsy, but in most cases have a fever of 103 to 106 degrees. The convulsion may consist of a single paroxysm, during which time the muscles are in a tonic spasm, or there may be a series of muscular contractions, the entire attack lasting several hours. Consciousness may be affected in various degrees, but, as a rule, the fever case has coma, especially following the convulsion. This coma is deep, accompanied by fever and stertorous breathing. The respirations are accelerated and the pulse is rapid. The urine will always show the presence of albumin, and a simple test for albumin will often confirm the analysis when the other prominent symptoms are present.

Uremic coma differs from apoplectic coma in that there is the absence of hemiplegia, no conjugate deviation of the eyes, pupils not unequal, and no high arterial tension in uremia.

Epileptic coma is of short duration, is preceded by an epileptic convulsion, and the urinary symptoms of the skin and urinalysis are absent. For further differentiation, see coma.

ACUTE BRIGHT'S DISEASE.

Definition.—This is also known as acute nephritis, and is an acute inflammation of the parenchyma of the kidney.

Etiology.—Subluxation at K. P.

Pathology.—The inflammation usually effects the uriniferous tubules. The vessels become hyperemic, the lining becomes swollen, the kidney is enlarged, and the cortex is a deep red color. Exudation of serum, fibrin, blood cells and debris into the tubules forms casts and fills up the lumen of the tubules.

Symptoms.—The onset may be sudden or gradual, and is first marked by the development of dropsy. The edema is usually first seen beneath the eyelids and about the ankles, but soon spreads to the entire body, developing into general dropsy or anasarca. The abdomen becomes distended, the diaphragm is pressed upward, thus interfering with respiration, and necessitates the patient assuming the erect position. There is usually slight or moderate fever, nausea and vomiting, pain over the kidneys, dry, harsh skin, with a urinary odor, and a rapid, full pulse. Uremic symptoms result. The urine is of high specific gravity (1.025 to 1.030), is very scanty in quantity, often being as low as four to five ounces in 24 hours, is of a smoky color, albumin is present in large quantities, and casts from the tubules can be found upon microscopical examination. See urinalysis.

CHRONIC DIFFUSE NEPHRITIS.

Definition.—This is also known as chronic Bright's disease, and is a chronic diffuse inflammation of the cortical substance of the kidney.

Etiology.—K. P. subluxation.

Pathology.—Pathologically this is known as the large white kidney, often becoming twice the normal size; it is smooth and of a whitish-yellow color. The vessels are

hyperemic, the tissue of the organ swollen, the tubules thickened and dilated, and filled with an exudate consisting of destroyed epithelium, serum and fibrinous casts. There may be a proliferation of the connective tissue cells, with a resulting thickening of the interstitial tissue. Upon the thickening of the connective tissue it contracts and diminishes the size of the kidney.

Symptoms.—The onset of chronic Bright's disease is always gradual, and is usually first called to the attention of the patient by a puffiness of the eyelids, weakness and general ill health.

There is suppression of urine, more gradual than in the acute form, which gradually leads to the uremic symptoms. The urine is scanty, high-colored, and contains an abundance of albumin. Its specific gravity is low (1.010), and the urine contains casts of the tubules, called tube casts. The dropsy increases, interfering with respiration so that the patient may have to constantly assume an erect posture, even while sleeping. The dropsy will be most noticeable in the parts of the body that are in the lowest level; that is, if the patient should lie upon the right side, the right arm, leg and right side of the face and body will be swollen, while the opposite side may show but slight signs of edema. Anemia becomes pronounced from the loss of albumin and the retention of urine in the blood. All this is produced by the K. P. subluxation causing pressure upon the nerves leading to the kidney, making it inflamed and unable to perform its normal function.

CHRONIC INTERSTITIAL NEPHRITIS.

Definition.—A chronic inflammation of the intervening connective tissue of the kidney, with a resulting hardening and contraction of the organ.

Etiology.—This is caused by a subluxation at K. P., producing impingement upon the nerves leading to the connective tissue of the kidney, and so interfering with its

calorific function that there is excessive heat produced in this connective tissue. The thickening and hardening that results is produced by the inflammation.

Pathology.—This usually affects both kidneys; they becoming inflamed, the vessels of the connective tissue becoming hyperemic, and the connective tissue cells proliferating and contracting. This contraction decreases the size of the kidney, so that pathologically this is called the small white kidney. The cortex becomes thin from the pressure of the connective tissue, and is of a dark brown color. This is also called sclerosis of the kidney, cirrhosis of the kidney, contracted kidney, and chronic Bright's disease.

Symptoms.—The condition may exist for years before the symptoms present plainly point to the disease. Usually the first symptom to attract the patient's attention is the frequent voiding of large quantities of pale urine. Urinalysis shows the urine to be a low specific gravity (1.005 to 1.010), and contains a few casts and occasionally a small amount of albumin. The vision rapidly fails and the conjunctiva is edematous; sometimes sub-conjunctival ecchymosis appears, giving to the eye a blood-shot appearance. There are frequent attacks of vertigo, headache, dyspnoea, palpitation, progressive anemia and weakness. The skin becomes yellowish in color and is dry and scaly. Toward the end the urine is decreased in quantity, and general dropsy may develop, with uremic convulsions.

AMYLOID KIDNEY.

Definition.—An abnormal condition of the kidney in which it undergoes a starchy degeneration, there being an infiltration of an albuminoid material resembling boiled starch.

Adjustment.—K. P.

Pathology.—The subluxation at K. P. produces pressure upon the nerves governing the function of nutrition, thus

perverting its expression in the metabolism of the organ. The result of this abnormal metabolism is the infiltration of the amyloid substance, which occurs among the vessels and around the glomeruli. The pressure exerted upon the functionating structure of the kidney is such that it produces atrophy and disordered function.

Symptoms.—Amyloid kidney is called Bright's disease by some authorities, but most authorities consider it a separate affection.

Amyloid degeneration of the kidney is usually associated with a similar degeneration of the spleen, liver and pancreas. The liver and spleen become enlarged so that they may be palpable, the urination is increased in quantity and also in frequency. The urine is pale in color, of low specific gravity, and contains an abundance of albumin. The blood pressure is raised, the left ventricle becomes hypertrophied, and uremia develops, with dropsy.

In amyloid kidney there is usually the history of prolonged suppuration, as in tuberculosis or syphilis, palpable enlargement of the spleen and liver, polyuria, and presence of albumin in the urine.

The adjustment of the vertebral subluxation at K. P. will remove the pressure upon the nerves leading to the kidney, and permit the normal transmission and expression of the mental impulses at the periphery of the nerves. This will result in normal nutrition as well as normal expression of other functions in the kidney, whereby it gradually regains its former normal condition.

PYELITIS.

Definition.—An acute catarrhal inflammation of the mucous membrane lining the pelvis of the kidney. If the inflammation is suppurative in character it is called pyelonephritis.

Etiology.—Pyelitis is caused by a K. P. subluxation impinging the calorific nerves leading to the mucous membrane of the pelvis of the kidney, bringing about a perversion of the expression of the calorific function, known as inflammation.

Pathology.—The mucous membrane being inflamed, there is hyperemia of its blood vessels, a swelling of the membrane from infiltration of serum, and a catarrhal exudation from its surface. The exudation consists of abnormal mucus, destroyed epithelium and blood corpuscles. If the inflammation becomes suppurative in character the exudation is purulent, or contains pus of a yellowish-white color. The process may extend into the substance of the organ after having destroyed the mucous membrane so that its function is impaired and uremia will result. The pus is discharged with the urine and can be found upon microscopical examination of the urine.

Symptoms.—When acute the onset is with chilliness and severe lumbar pains, which may extend downward along the course of the ureters. Superficially there is great tenderness over the region of the kidney radiating from the lower dorsal intervertebral foramen. Fever may be present and usually has an irregular course, especially when the inflammation is suppurative. There is frequent voiding of urine of a white or cloudy color, which may be acid or alkaline in reaction. If hemorrhages occur from the vessels of the lining membrane, there will be hematuria, and if suppuration occurs, there will be pus in the urine. When the inflammation is suppurative the fever is of the intermittent type, there being chills and sweats. Cerebral symptoms may appear, in which there is delirium, stupor, coma and, possibly, uremic convulsions. The inflammation may become chronic, and the discharge will occur with the urine more or less continuously, with aching in the loins. The pain and tenderness is increased by stooping or lifting. As a rule, the patient is emaciated and weak.

HYDRONEPHROSIS.

Definition.—Is an accumulation of urine, water or other fluid in the pelvis of the kidney, which eventually forms a cystic condition of the kidney.

Adjustment.—K. P. or upper lumbar.

Pathology.—There is obstruction of the ureter. This obstruction may be produced by a lodged renal calculus, or a constricted ureter, or a twisted ureter, as may occur in floating kidney.

Symptoms.—This condition may exist without giving rise to any symptoms if the ureter is only partially obstructed and the accumulation is small. If the accumulation of fluid is large the kidney may be prolapsed and will produce pressure symptoms. Among the pressure symptoms are pain of a bearing down or dragging character, dull aching pain in the lumbar region, and upon palpation an enlarged organ can be felt. If a small opening exists in the ureter there may be frequent and immense urination, after which the cyst or enlarged kidney cannot be palpated. Should the obstruction be removed all symptoms will disappear, but should the obstruction be permanent the organ will become infiltrated with its own secretion, with the result that the organ becomes functionless and undergoes atrophy, the entire work being thrown upon the other kidney. Hydronephrosis is always unilateral. Should both ureters be obstructed the result would be uremia and death.

The condition may simulate acute nephritis, but fever is absent, dropsy absent or less in degree, and urinalysis will positively prove the difference.

NEPHROLITHIASIS

Definition.—It is a crystalization and adhesion of the calcareous material of the urine, which forms into irregular shaped calculi in the pelvis of the kidney. Nephro means kidney and lithos means stone. Hence the term nephro-

lithiasis. This is also called kidney stone, renal calculus and kidney gravel.

Etiology.—The subluxation at K. P. produces excessive heat in the pelvis of the kidney. This excessive heat tends to crystalize the mineral elements of the urine, which, when crystalized, adhere to any solid substance that may be found in the pelvis of the kidney, such as particles of pigment, mucus, or blood. This forms a nucleus, and as more crystals are formed they adhere to the small mass, increasing its size until it could be called gravel or stone. This stone may be of various kinds, according to the kind of mineral matter of which they are composed. The principal varieties are uric acid calculi, urate of ammonium, lime and calculi composed of phosphates. Most frequently these calculi are irregular in shape, some being round, others elongated, with many sharp corners.

Symptoms.—So long as the stone remains in the pelvis of the kidney no symptoms arise, and their presence cannot be determined. When a calculus leaves the pelvis of the kidney and passes into the ureter it produces intense agonizing pain, and is called renal colic. The small irregular stones produce the most pain, because of their sharp processes which lacerate the delicate mucous membrane lining the ureter as they are forced through it.

The pain begins in the dorso-lumbar region and radiates downward diagonally across the abdomen to the bladder. The abdominal muscles are contracted, the testicle on the affected side is drawn up, and the patient often rolls around in a fit of intense agony. The surface temperature is lowered, the skin is pale; there may be nausea and vomiting, and occasionally syncope. There may be dribbling of urine, which is stained with blood, or there may be frequent urinations of small quantity. The pain may be intermittent when the stone becomes lodged or is stopped, recurring when it again starts, or may be continuous for several minutes or hours, ending suddenly when the stone reaches

the urinary bladder, after which there may be copious urination, the urine containing blood.

Very rarely the stone remains permanently lodged in the ureter, the result being hydronephrosis. An inflammation may arise at the point of lodgement, finally becoming suppurative, with recurring chills, fever and sweats.

Following the passage of the stone the patient is prostrated, and may fall into a sleep from exhaustion. There may be aching across the back for several days, and the urine will contain a heavy sediment which settles upon standing.

Differential Smyptoms.—Hepatic colic may simulate right renal colic, but differs in that there are jaundice, clay-colored stools, pain radiating upward under the right shoulder blade, tenderness over the right hypochondriac region, Li. P. subluxation, and nerve tracing from Li. P. to region over liver.

Right renal colic may also be simulated by appendicitis, but the latter differs in that it is characterized by fever of 102 degrees or over, tenderness at McBurney's point which is traceable to the second lumbar vertebra, indicanuria, constipation, right thigh flexed upon the abdomen, retraction of the abdominal muscles, and dyspnoea, with shallow breathing.

Cystitis and stone in the bladder differ in that the pain is located in the hypogastric region in the median line of the body, pain more severe after urination, urination is easier when lying than when standing, as the stone may obstruct the urethra, and the calculus may be felt with a sound.

CANCER OF THE KIDNEY.

Definition.—A milignant tumor composed of epithelium or connective tissue growing upon the kidney.

Adjustment.—K. P. This K. P. subluxation impinges the nerves that have to do with the growth and multiplica-

tion of cells, and affects these cells in such a way that their growth is riotous, or cannot be controlled, thus becoming tumorous. The tumorous mass then undergoes a form of depletion known as colloid degeneration. The cancer may be carcinoma or sarcoma. For pathology of carcinoma, see Diseases of the Stomach.

Symptoms.—So long as the growth is small and there is no decay, the symptoms will be absent and the condition not recognized, unless upon abdominal palpation, or an X-ray negative may reveal the growth. As the growth becomes larger there will be dull aching pain in the dorso-lumbar region, with a sense of weight or bearing down. Because of the added weight there may be nephroptosis. There are alterations in urination, the urine contains blood and pus, the patient becomes emaciated and debilitated, and the cancerous cachexia develops. The appetite is poor, vomiting is common, and the kidneys may finally lose their power of excretion, whereupon dropsy develops, with fever and extreme prostration.

PERINEPHRITIC ABSCESS.

Definition.—A suppurative inflammation of the capsule surrounding the kidney, in which there is the localized accumulation of pus.

Adjustment.—This is caused by a K. P. subluxation which impinges nerves leading to the capsule of the kidney, resulting in a suppurative inflammation, with the formation of pus. This pus accumulates between the capsule and the kidney substance, or within the connective tissue spaces surrounding the kidney. Perforation and peritonitis may occur.

Symptoms.—This begins with severe aching pains over the region of the kidney, and since the condition is unilateral the pain will be localized over one kidney. There is recurring chills, fever and sweats. The patient lies in the dorsal posture, with the thigh on the affected side flexed

upon the abdomen. Upon palpation the kidney is found to be enlarged and excessively tender, the tenderness often being so great that the palpation of the organ is impossible. The spinal muscles over the affected kidney may be swollen, and tenderness is traceable from K. P. over the entire region of the affected kidney.

There are no urinary symptoms, unless the kidney itself is also affected. It differs from pyelitis in that there is no hematuria, nor is there pus in the urine; neither is the acidity of the urine increased.

SECTION IX.

DISEASES OF THE NERVOUS SYSTEM.

EPILEPSY.

Definition.—Is an incoordination of the educated brain lobes, characterized by a loss of consciousness, with or without tonic or clonic convulsions.

Etiology.—Epilepsy is caused by an Atlas subluxation, but since it is frequently associated with disorders of the generative organs, heart, stomach, or spleen, the adjustment should also be made local for the associated condition.

There is no regular or constant pathological condition in epilepsy, but often it is found that there is a chronic thickening of the meninges of the brain or adhesions of the end-plates of the brain.

Symptoms.—There are two forms of epilepsy, the grand mal and the petit mal. The temporary loss of consciousness without the convulsion is known as the petit mal, and the loss of consciousness with the convulsion is called the grand mal.

The grand mal is often preceded by premonitory symptoms, such as vertigo, malaise, mental depression, and the epileptic aura. This aura may be different in different people, but in most cases consists of an apparent vapor arising from the trunk upward toward the head. Immediately following the aura, or when the imaginary vapor reaches the head, the patient utters a cry, turns the head to one side and passes into a tonic convulsion. During this tonic spasm the trunk is rigid, the extremities are extended, the hands are firmly closed and the jaw is clenched. The respiratory muscles are fixed so that the patient becomes deeply cyanosed.

The duration of the tonic spasm varies from a few seconds to one or two minutes, after which the patient passes into a clonic convulsion. During the clonic spasm the muscles contract and relax alternately, the jaw works convulsively, forming foam at the mouth, and often the tongue or lips are bitten, thus staining the foam with blood; the arms and legs go through a rythmical contraction and relaxation, differing from that of hysteria, and the head may be rolled from side to side, or may be repeatedly struck against the floor.

This clonic spasm lasts for a few minutes, after which the patient falls into a profound sleep, the epileptic coma. The coma lasts about an hour and is followed by a severe headache, mental sluggishness and disordered thought. The patient will have no knowledge of what has transpired during the attack, and may not know that he has had an attack, unless in falling at the onset of the seizure he may have bruised his head or bitten his tongue. There may be mental dullness for two or three days following the attack, after which he again regains his usual status.

The attack often comes on with a great deal of regularity and with varying frequency. In females they often appear at the time of the menstrual period. Several seizures may occur at a time with or without any intervening periods of consciousness.

Epilepsy usually begins between the ninth and twentieth years, and the great majority of cases begin at puberty, although irregular convulsions and other peculiarities may occur previously. When the attacks occur but a few times a year, as is often the case, the mental functions are not affected, but when recurring frequently the mentality may be greatly affected, there being mental dullness, slowness of thought, defective reasoning, poor memory, inability to concentrate, feeble-mindedness, and sometimes insanity. Psychical epilepsy is a form attended with maniacal excitement, violent temper and attempted crimes.

The petit mal is a form in which there is a temporary loss of consciousness, but is not attended with the convulsion. This may come on suddenly without any premonitory warning while the patient is employed at work. He stops and stares, but does not fall, the features are fixed, the face is pale, the pupils are dilated, and there may be a slight twitching of the muscles of the face or an extremity. The attack usually lasts for but a few seconds, after which the patient will resume his work without any exhaustion, but conscious that something unusual has transpired. Some patients will have premonitory symptoms of a subjective character, and will sit down during the attack. The petit mal may occur in patients that suffer with the grand mal, or patients may have the petit mal without ever having a major attack.

There is no known reason for the regularity in the occurrence of the spells, but the following theory is offered:

The atlas subluxation impinging the nerve fibres leading to the lobes of the educated brain and preventing the normal transmission of Innate mental impulses to that part of the brain, the result is abnormal metabolism. Wherever there is abnormal metabolism there is the formation and accumulation of poisons, and diminished molecular activity in the cells thus affected. It is noticeable that immediately preceding an attack that the degree of mental dullness and inactivity increases until after the attack. Following the attack the patient becomes much brighter, and may be very alert mentally. Therefore it may be that this poison accumulates until the maximum of endurance is reached, at which time it is manifested in the epileptic convulsion. During the convulsion the poison is discharged from the brain and eliminated by the kidneys, the patient feeling well until more has accumulated. Some medical writers say there is a discharge of gray matter from the brain into the muscles during the attack.

The muscles are unusually rigid immediately after an attack, and more force is required in moving the vertebrae than during the intervals of coordination.

MIGRANE OR HEMICRANIA.

Definition.—A paroxysmal incoordination characterized by severe unilateral headache, disorders of vision, and bilious vomiting.

Adjustment.—This is caused by a combination of subluxations, including atlas and S. P. The atlas subluxation impinges the nerves distributed to the side of the head, and the S. P. subluxation affects the pyloric valve mainly, so that it is incapable of properly guarding the pyloric opening and permits the regurgitation of bile into the stomach.

Symptoms.—The paroxysm of headache may be preceded by malaise, a feeling of depression, heaviness over the eyes, and indigestion. The headache begins at the base of the skull, usually on the left side, and radiates upward and forward over the temporal and frontal regions. The pain may be confined to this one side, or may change to the opposite side, or become diffuse over both sides. The headache is intense and throbbing, and is increased in severity upon stooping, jarring or by hearing loud noises. The eyes are sensitive to light, and there may be a dimness of the visual field. There is nausea and vomiting, the vomitus consisting mostly of bile. The urine is highly concentrated, and may be high in acidity.

The attack may be of varying duration, from a few hours to several days. Severe cases may occur in which the headache is constant, and vomiting spells reappear each day.

Adjustments at atlas and S. P. readily correct the incoordination, and in cases in which there are other associated conditions, a local adjustment should be made. Disorders of the generative organs are most frequently asso-

ciated, and the attack most frequently occurs in women during the menstrual periods. It is not infrequent that the incoordination is of sufficient severity to confine the patient in bed for one or more days.

HYSTERIA.

Definition.—Hysteria is an incoordination of the brain, characterized by excitability, mental depression, and a loss of the emotional control.

Etiology.—Hysteria is caused by an atlas or axis subluxation. However, there may be associated conditions which should be adjusted for locally. The principal of these is sexual disturbances, and the local adjustment is lower lumbar.

There are two forms of hysteria—major and minor, or severe and mild.

Symptoms of Hysteria Minor.—This occurs periodically, and is often induced upon unusual excitement. There may be headache, poor appetite, vomiting, and general hyperasthesia, especially along the spine. The individual is very irritable and is easily offended. The attack often begins with laughter, crying or senseless talking, and is followed by the globus hystericus, or a sensation of a ball arising from the pit of the stomach to the throat. This produces a sensation of choking. The muscles are contracted, the eyes may be closed, and the patient may throw herself upon the floor struggling violently, although this latter symptom belongs to hysteria major. There is rapid changing of the mood, a craving for sympathy, and loss of the power of concentration.

Symptoms of Hysteria Major.—The major attacks are always preceded by the minor attacks, in which there is laughing and crying, cutaneous anesthesia, globus hystericus, and often involuntary voiding of urine. This may be followed by the hysterical convulsion, in which the eyes are

closed, the limbs are extended, the hands are closed, the patient may scream and pull her hair. The contractions and relaxations lack the rythm found in epilepsy, because they are more or less intentional and controlled by the will. The patient is always offended if told this.

Very frequently paralysis is found in hysteria major, and usually is in the form of a monoplegia or a hemiplegia. In cases of hysterical hemiplegia the gait is peculiar, in that the affected leg is drawn up even with the other, and the advanced step is always made with the unaffected foot. There is a craving for sympathy, weakness of the will, lack of self control, constant thinking of self and enlarging upon personal discomfort. Following the convulsion the patient may pass into hysterical coma. This, however, is only partial, and the patient may be aroused by firm pressure upon the supraorbital notches or by pinching the nose.

The respiration and pulse are normal during both the convulsion and coma, cyanosis does not occur, the lips do not foam, and the patient does not bite the tongue or lips.

Hystero-epilepsy is not epilepsy, but a form of hysteria major in which the convulsion resembles that of epilepsy.

Hysteria occurs most frequently in women, while neurasthenia is more common in men. The cardinal difference is that in hysteria sympathy is craved for, in neurasthenia sympathy is not desired. Hysterical patients are more often fleshy and plump, while neurasthenic patients are usually thin and emaciated.

NEURASTHENIA OR NERVOUS PROSTRATION.

Definition.—This is also called the American disease, and is an incoordination of the brain system, characterized by various forms of bodily and mental inefficiency.

Etiology.—This is usually caused by an atlas subluxation, but may be in combination with local, especially in the lumbar region. It is very frequently the case that the

generative organs are also affected, and sometimes a history of sexual excesses, mental strain or great emotion precedes the attack.

Symptoms.—Nervous prostration is more commonly found in men, and usually begins with persistent occipital headache, mental depression, inability to concentrate the mind, insomnia or sleeplessness and general irritability. There is a feeling of cranial constriction, as if a tight band were placed around the head, or the patient may complain of a pressure upon the vertex of the head. There is a feeling of spinal weakness; usually there is hyperaesthesia, or there may be perverted sensation with a feeling of formication. Ringing in the ears and dizziness is common; the sexual function is weakened or may be totally abolished, and there may be various cardiac and gastric neuroses. Palpitation is the most common cardiac disturbance and hyperacidity of the gastric juice the most common digestive disturbance.

Among the sensory disturbances, those of the eyes are most common and pronounced, there being astigmatism or unequal refraction of light, myopia or short sightedness, and hypermetropia or far sightedness. There may be hyperacusis or dysacusis, and the sense of smell may be perverted.

When a history of injury precedes the onset of neuraesthenia it is called traumatic neurosis or traumatic neuraesthenia. The symptoms, however, are the same, consisting principally of spinal hyperaesthesia, muscular weakness, hypochondriasis, irritability, diminishing in power of concentration, impaired function of the bladder and general bodily impairment.

Neuraesthenia yields very readily to Chiropractic adjustments. Of the many cases on record, several have fully recovered after taking one week's adjustments. An extreme case fully recovered after forty adjustments, the adjustments being given two or three days apart. In the trau-

matic form there may be varying combinations of subluxations produced and the adjustment will have to be made accordingly.

CHOREA OR ST. VITUS DANCE.

Definition.—A chronic incoordination characterized by irregular involuntary contractions of the muscles with varying degrees of excitability.

Etiology.—Chorea is usually caused by an atlas or axis subluxation, but when localized, as in the muscles of the neck, around the eyes or face, it may be caused by a local subluxation, as will be determined by vertebral palpation.

There is no localized pathology in chorea, and as a rule there is no nerve-tracing, but tenderness of a diffuse character may be present. It is primarily an affection of the motor function, caused by pressure upon the motor nerves distributed to the muscles affected.

Symptoms.—Chorea is more commonly found in girls during childhood or about the age of puberty, but may be found at any age or in either sex. The onset is gradual and may be first noticed as a slight twitching of one or more muscles. Many cases begin with winking of the eyelids, twitching of the mouth when speaking, drawing of the neck muscles, or a jerking of the hand or arm. This muscular twitching may be confined to the muscles originally affected, but in most cases, if the affection is progressive in character, the contractions become evident in all the muscles of the face, neck, arm and leg, after which the opposite side is similarly affected. The twitching is increased in severity upon mental excitement, as when talking, especially to strangers, or when conscious of being watched. The speech is indistinct and confused, thoughts are flighty, concentration is poor, the intellect is dull, the temper is irritable and the muscles are weak and easily exhausted. The muscular movement subsides during sleep.

The heart's action is irregular, the appetite is poor and digestion is impaired, the result being emaciation and weakness. Constipation is present in nearly all cases, and in the more severe cases there may be mania and delirium. When the two latter symptoms are present it is called maniacal chorea.

Chorea usually occurs in attacks of five or six weeks duration and may be repeated several times. Other cases may begin during early life and remain permanent. It is not uncommon in the ordinary severe case for the patient to be unable to feed himself, yet there may be no paralysis. Occasionally a monoplegia occurs, when it is called paralytic chorea. The patient may recover from the chorea and the monoplegia remain.

Chorea also yields very readily to the adjustments, several cases within my observation having recovered completely after one to four weeks' adjustments.

Habit Spasm is a name given to a mild form of chorea, which is caused by an atlas subluxation and is characterized by a sudden quick contraction of the muscles of the face, neck or shoulders.

These muscular contractions may consist of a drawing of the mouth to one side, a shrugging of the shoulders, or a nodding of the head. The patient gets into the habit of going through these peculiar moves from time to time, and their extensiveness increases gradually until the condition is given this name.

SALTATORY SPASM.

Definition.—An incoordination of the muscles of the lower extremities in which there is a jumping or a springing movement.

Etiology.—This is caused by a subluxation of the lower lumbar, or may be caused by a cord impingement at the atlas.

Symptoms.—So long as the individual is sitting or lying and no weight is placed upon the feet no symptoms are noticed, but as soon as the patient arises the calf muscles suddenly contract so that the patient springs or jumps. The springing may be associated with screams or symptoms of mental instability.

TORTICOLLIS OR WRYNECK.

Definition.—An incoordination in which there is a tonic spasm of the sterno-cleido-mastoid muscle, and sometimes of the upper part of the trapezius.

Adjustment.—This is caused by a local subluxation in the cervical region, usually the atlas, which impinges the motor nerves leading to the muscles affected, and especially affecting the spinal portion of the spinal accessory nerve which is distributed to these two muscles.

Symptoms.—This may begin suddenly, with severe pain when movement is attempted, or gradually, with feelings of discomfort, pain in the neck, and slight spasms of the neck muscles. At first these spasms are clonic or intermittent. Each spasm or attack is increased in duration until the contraction becomes tonic or constant, when all pain subsides. The head is drawn down toward the affected side, the chin is tilted upward and the face rotated toward the opposite side. The sterno-mastoid muscle on the affected side becomes hypertrophied and the opposite one atrophies because of non-use.

This is sometimes called muscular rheumatism of the sterno-mastoid muscle. As a rule the facial muscles are not affected by the contraction, but occasionally there may be facial asymetery. The adjustment releases the pressure upon the motor nerve and permits normal flow of innate motor impulses which restore normal tonicity to the contractured muscle.

SPASMUS NUTANS. (Nodding Spasm)

Definition.—This is also called the Nodding Spasm, and is an incoordination of the muscles of the neck, characterized by a regular nodding movement of the head.

Etiology.—This is caused by an Atlas subluxation, or may be caused by an M. C. P. subluxation. Determined by palpation.

Symptoms.—This disease begins with periodical attacks which may be violent and last for several minutes. The attacks are prolonged, and may last for hours or may be constant. The movements are of varying rapidity, being from 30 to 60 per minute. The eyes and face may be affected and the nodding movement may be from side to side or backward and forward.

SPASMODIC TIC WITH COPROLALIA. (Insane utterance of filthy words)

Definition.—An incoordination of the muscles of the body associated with mental instability, characterized by involuntary muscular contractions and indecent utterances.

Etiology.—Atlas subluxation.

Symptoms.—The incoordination makes its appearance in paroxysmal attacks, which are irregular in time of occurrence. At first the head and the upper extremities alone are involved, but later the muscles of the major portion of the body become affected. The attack begins with a sudden contraction of the muscles of a part or all of the body, during which time the patient will jerk, jump, hiccough, bark, or go through movements similar to sneezing. During the attack the patient will make inarticulate utterances, or, if the words are articulate, are of an obscene or profane character. The utterances are made very rapidly, as are the muscular movements. This condition is most commonly met with in young boys, slightly before or at puberty.

PARALYSIS AGITANS.

Definition.—This is also called Parkinson's disease or shaking palsy, and is a chronic incoordination of the muscles, characterized by muscular weakness, tremor and flexor rigidity.

Adjustment.—Atlas and A. P.

There is no known pathology and no definite nerve-tracing in shaking palsy.

Most cases begin after the fortieth year of life.

Symptoms.—This usually begins with slight aching pains in the thumb and first two fingers of one hand, and a slight unsteadiness of the thumb of the affected hand, which soon develops into a tremor. Later the tremor starts in the fingers, and the characteristic "bread crumbling, or pill-rolling" movement is noticed. The extent of the tremor increases so that the entire forearm trembles, and the tremor begins to be noticed on the hand of the opposite side. The legs, face, and neck muscles may become affected. There is a marked flexor rigidity affecting all of the muscles of the body so that the patient always assumes a stooped position, the knees are bent, the forearms are flexed upon the arms, and the trunk leans forward.

The festination or propulsive gait is characteristic of this disease; in it the patient leans far forward, and it appears that he is on the point of running or that his gait is increasing in speed and his steps are shuffling. It is difficult for him to stop quickly or to turn a corner, the voice becomes weak and high-pitched, the saliva is secreted in excess, and often dribbles from the mouth, and the patient is usually emotional.

The movement temporarily stops upon voluntary movement and during sleep. The patient is usually restless, and sleeps poorly. The general health may be fairly good, and life is not greatly shortened by the paralysis, but the patient may become entirely helpless.

THE OCCUPATION NEUROSES.

Definition.—An incoordination of the muscles on the thumb and first two or three fingers, in which they are subject to spasmodic contraction when brought into active use.

Adjustment and Nerve-Tracing.—This is caused by a subluxation at A. P., and tenderness can be traced from the seventh and eighth intervertebral foramen over the shoulder and down the arm to the fingers affected.

Symptoms.—There are various forms of occupation neuroses, and other muscles than those of the hand may be affected. But the most common are writers' cramp and telegrahpers' paralysis.

The onset is slow with slight stiffness and jerky movements when writing, or there may be numbness or prickling sensations. The degree of stiffness increases until it develops into a cramp. In writers' cramp the flexor muscles are affected so that upon prolonged writing the fingers and thumb close tightly in a tonic spasm, and movement ceases. In telegraphers' paralysis the extensor muscles are affected, and when the muscles are used for an unusual length of time the fingers straighten out in a tonic spasm so that the necessary movement in working is impossible.

This is an affection of the motor function caused by the A. P. subluxation impinging motor nerves leading to the muscles of the hand. When the subluxation is properly adjusted the pressure is relieved, and the muscular function is restored to normal.

TETANY.

Definition.—A muscular incoordination, characterized by bilateral tonic spasms of the extremities, which may be either paroxysmal or continued.

Adjustment.—This incoordination is caused by an Atlas subluxation. In some cases local at A. P. should be adjusted.

Symptoms.—This is also a motor disturbance and occurs gradually, with a contracting of the flexors of the arms and legs so that the arms are folded, the wrists are flexed, and the fingers are usually extended, but may have athetoid movements. The thumb is usually folded in the palm of the hand, the toes are adducted, and the foot is extended. The muscles of the face, back and abdomen are also sometimes affected. When the respiratory muscles are affected, breathing may be suppressed, and cyanosis will result. The contraction may be periodic or continuous. In the paroxysmal form the attack may last for about two weeks, after which muscular coordination supervenes. In the continuous type the muscles are tonicly contracted except during sleep, but still the muscles are constantly in motion. Late in the disease lockjaw may occur. In tetanus, trisms is an early symptom, in tetany the masseter muscle is the last to be involved. This is an important point in the differential analysis of these two affections. Tetanus is also an acute febrile disease, with high fever; frequently follows wounds, and is marked by contraction of the spinal muscles, cervical retraction and opisthotonus.

RAYNAUD'S DISEASE.

Definition.—A form of dry gangrene affecting the fingers and toes, characterized by coldness, numbness, and a waxy pallor.

Adjustment.—The adjustment should include K. P. with local, according to the extremities affected.

Pathology.—In the early stages there is a thickening and hardening of the walls of the terminal arteries and arterioles, and they may become occluded, thereby producing a condition of local asphyxia in the tissues supplied by the obstructed arteries. The result of this is dry gangrene. The digits affected become atrophied and undergo necrosis.

Symptoms.—This usually affects two or more fingers or toes, according to the extremities affected. The affected digits become cold, numb, and the skin becomes dry and shrunken, and they feel as if paralyzed. Later all the fingers become affected, the hand becomes discolored, the bones and tendons become prominent and the ends slough off as a result of the necrosis. In the more severe cases the hand may become swollen, blue, and an area of inflammation will be seen lying between the area of necrosis and the line of demarcation. The necrosis will not extend above the point of obstruction of the vessels, and will heal when this point is reached. Life is not shortened, as a rule, from the affection.

ERYTHOMELALGIA.

Definition.—This is a neuralgia of the hands or feet characterized by redness and a continuous burning pain. The term means a painful red extremity.

Etiology.—This is caused by a local subluxation impinging the calorific nerves leading to the affected parts. If of the hands, the subluxation is at A. P., and if of the feet, is at the lower lumbar region, as will be determined by vertebral palpation.

Nerve Tracing.—Tenderness can be easily traced from the point of the local impingement along the course of the nerve to the affected part.

Symptoms.—The feet are most frequently affected by the pain, which is continuous and of a burning character, and located principally in the heel or ball of the foot. The affected part is swollen and red, due to the congestion of the blood vessels. As a rule, it is increased in severity at night, and can be relieved by lying with the feet placed horizontally. Blisters and slight ulcerations may form upon the red and swollen area. This differs from plantar neuralgia, in that there are both swelling and redness, and pain is relieved upon lying down. In the neuralgia the pain is continuous.

PROGRESSIVE FACIAL HEMIATROPHY.

Definition.—An incoordination characterized by progressive wasting of the bones and soft tissues of one side of the face.

Etiology.—The cause is located in the upper cervical region, principally the atlas and K. P. should be included in the adjustment.

Pathology.—This is simple atrophy, first affecting the subcutaneous areolar tissue and later affecting the bones so that they may be decreased to two-thirds of their normal size. The fat in the orbit of the eye may entirely disappear.

Symptoms.—This disease begins very slowly and is first marked by patches of leucoderma, and a dryness and scaliness of the skin on one side of the face. The hair on this side may fall out in patches, the skin will begin to wrinkle and the subcutaneous tissue begins to waste away. The eye on the affected side becomes deeply sunken because of the atrophy of the fat in which it is imbedded, the inferior maxillary atrophies to two-thirds its normal size, the eyelids become narrow and insufficient to cover the eye, the pupil is dilated, and there is lack of sebum or sebacious fluid secreted. Occasionally there is pain, and there may be slight spasms of the muscles of the face and those of mastication. The mouth is drawn to one side, and a distinct line of demarcation can be noticed between the affected and unaffected parts of the face.

ACROMEGALY.

Definition.—This is also called the pituitary body disease and Marie's disease. It is an abnormal condition of the function of cellular growth, characterized by abnormal processes of growth, chiefly of the bones of the hands and face.

Adjustment.—Atlas.

Pathology.—It is supposed there is an incoordination of the pituitary body which affects its internal secretion, the result being an overgrowth of the bones of the hands and face, especially the inferior maxillary.

Symptoms.—The onset is very slow and gradual, the first changes being a dryness and roughness of the skin, with patches of leucoderma. The facial expression changes and the face becomes massive. The bones and the subcutaneous tissue of the face hypertrophy. The fingers become enlarged and give rise to the deformity known as "spade hand." The voice is altered, the sexual power is abolished, the tongue, lips and nose are thickened, the muscles are weakened, there may be polyuria, and the chest bulges anteriorly.

NEURALGIA.

Definition.—A painful condition of the nerves in which there is either a functional disturbance at their peripheries or a neuritis in their course. The adjustment for neuralgia is always local, depending upon the nerves affected.

COCCYODINIA.

Definition.—A neuralgia affecting the lower sacral or coccyxgeal nerves.

Etiology.—This is usually caused by an anterior subluxation of the coccyx, but may be caused by a subluxation of the sacrum.

Symptoms.—The onset is sudden, and is characterized by sharp darting pains around the region of the coccyx. The pain is intermittent and may be brought on or increased in severity by sitting and walking. Upon palpation, tenderness can be traced radiating from the lower sacral foramen. The pain rapidly yields to adjustment of the coccyx or sacrum.

TARSALGIA.

Definition.—This is a pain in the sole of the foot, produced by a relaxation of the plantar ligaments. Is also known as broken instep, flat foot, and policeman's disease.

Etiology.—This is caused by a lower lumbar subluxation impinging the nerves conveying the motor function to the plantar ligaments, so that they become relaxed, permitting a slight abnormality in the articulation of the metatarsal bones.

Symptoms.—The cardinal symptoms of this condition is pain of a dull aching character in the foot, present only while standing or walking, and relieved upon taking the weight of the body off from the feet. It differs from plantar neuralgia in that the pain of the latter is paroxysmal and does not cease upon sitting or lying. There is no swelling nor redness.

SCIATICA.

Definition.—A neuralgia or neuritis of the sciatic nerve.

Etiology.—Sciatica is caused by a lower lumbar or sacral subluxation.

Pathology.—There is usually an inflammation of the sheath of the sciatic nerve, which produces a swelling and hyperemia of the structures surrounding the nerve. The swollen sheath compresses the nerve and produces pain. In other cases there may be neuritis of the nerve, in which instance there is the site of the inflammation. When the nerve substance is affected the pain is less and there is a considerable degree of paralysis, but when the sheath is affected the pain is great and the paralysis slight or absent.

Nerve Tracing.—The exact course of the sciatic nerve can readily be followed by nerve tracing, the tenderness being very great, and more severe at certain places, especially at the sciatic notch.

Symptoms.—The onset is sudden, with pain in the region of the hip, which radiates down the back of the thigh, and may extend up into the lumbar region. The pain may be dull and aching at first, but is extremely severe and lacerating at times, especially when moved. The pain is usually greatest at the sacro-sciatic notch, and can be made extreme at this point by flexing the extended leg upon the pelvis. The gait is limping, and the patient leans toward the affected side in order to minimize the pain. The pelvis becomes tilted and an adaptative scoliosis occurs in the lumbar region. The muscles of the affected limb become atrophied, the skin is cold, and if the nerve substance is affected, there will be paralysis. A red streak may be noticeable running down the posterior surface of the thigh, along the course of the nerve. The affection is nearly always unilateral, and yields rapidly to Chiropractic adjustments.

PLANTAR NEURALGIA.

Definition.—A neuralgia limited to the terminal branches of the sciatic nerve distributed to the sole of the foot.

Adjustment.—Lower lumbar. Same as sciatica.

Symptoms.—Irregular pain, with slight swelling and redness, present when standing or sitting is the cardinal symptom of this condition. The pain does not subside when the leg is placed in a horizontal position, as it does in erythomelalgia, and is the differential symptom between the two affections. The pain is sharp and darting, as in other neuralgias, not dull and aching as in tarsalgia. Walking is difficult. This disease often occurs as a part of sciatica, either preceding or following it.

LUMBO-ABDOMINAL NEURALGIA.

Definition.—A neuralgia affecting the upper lumbar nerves, characterized by pain of the lower abdominal muscles.

Etiology.—This is caused by local subluxations in the upper four lumbar vertebrae, as determined by vertebral palpation and nerve tracing.

Symptoms.—The disease begins with sharp pain in the back, loins and buttocks. The pain radiates anteriorly over the abdominal muscles, usually of one side, to the hypogastric and inguinal regions.

Occasionally the pain extends down into the thigh muscles, and then is called meralgia. The course of the affected nerve is tender, and can be readily followed upon nerve tracing.

CERVICO-OCCIPITAL NEURALGIA.

Definition.—A neuralgia affecting one or more of the upper four cervical nerves, and characterized by pain over the neck and head. The pain is usually unilateral, radiating outward from the occiput, over the back of the head, neck and toward the face. Tenderness is traceable, and vertebral palpation reveals the local subluxation, which is the causative agent.

INTERCOSTAL NEURALGIA.

Definition.—Pain localized in the spinal nerves distributed to the intercostal muscles.

Etiology.—This may be caused by a subluxation of any of the dorsal vertebrae, depending upon the location of the nerves affected. Usually the fifth, sixth and seventh dorsal nerves are affected, therefore would be caused by subluxations in the region of S. P.

Symptoms.—The onset is sudden, and the pain is sharp and stabbing. Tenderness is present at the point where the nerves emit from the spine, and they are traceable outward over the intercostal muscles. The pain is radiating and follows the course of the nerves to the anterior of the abdomen. This is usually unilateral, but may be bilateral. The muscles are tensed, but do not interfere with respira-

tion; there is no fever and no effusion into the pleura, which distinguishes it from pleurisy.

TRIFACIAL NEURALGIA.

Definition.—A neuralgia affecting the sensory division of the trigeminus or trifacial nerve.

Etiology.—The cause of trifacial neuralgia is a subluxation of the third or fourth cervical vertebra, which impinges fibres having connection with this nerve. This, as well as the cause of other diseases, has been discovered and proven through experiment, and is a fact, not a theory, appreciated by many sufferers of the annoying incoordination.

Symptoms.—The trifacial nerve has three divisions, viz.: Ophthalmic, superior maxillary and inferior maxillary. The two first named branches are most frequently affected, and the condition is also known as tic douloureaux, when associated with muscular twitching. It begins with sensitiveness in front of the ear, along the nose, at the supraorbital notch, or along the upper jaw. The parts are tender under pressure, and pain may be constant, but this pain is usually paroxysmal and intensely severe. The pain often manifests itself upon breathing cold air, opening the mouth unusually wide, yawning or blowing the nose, but may occur without any of the above events. It usually begins around the eye, or may shoot upward under the malar bone, and may extend backward as far as the occipital protuberance. There is excessive secretion of the lacrimal fluid, the conjunctiva may be red and painful, and herpes may form upon the eyelids and lips. Mastication and speaking is more or less hindered and painful, and there are spasmodic movements of the facial muscles.

MULTIPLE NEURITIS.

Definition.—Neuritis is an inflammation of a nerve. Multiple neuritis, which is also known as peripheral neuritis, is an inflammation involving many nerves.

Etiology.—Neuritis, like neuralgia, may be caused by a local subluxation, but when many nerves are involved it is usually due to a cord impingement at the atlas. C. P. and K. P. should be adjusted during the initial stages, when fever is present.

Pathology.—The excessive heat in the nerve produces hyperemia of its blood vessels and a slow vascular exudation of serum into the nerve substance, making it soft and resembling thick cream. As the inflammation is prolonged the fluid is dried up, the nerve atrophies and the connective tissue is thickened, giving rise to sclerosis. This change is called degeneration or depletion of the nerve. As a result of this depleted condition of the nerve it is unable to carry on its function of transmitting mental impulses, so that the muscles to which the depleted nerve is distributed suffer and become paralyzed. The paralysis is flaccid in character.

The adjustment restores normal transmission of heat impulses to the affected nerve, the inflammation subsides, and depletion undergoes a process of reparation in which the nerve structure is repaired and restored to normal function.

Symptoms.—This may begin with a slight fever of 101 to 103 degrees, but is usually ushered in with numbness, pains and general weakness in the parts affected, which are usually the lower extremities; however, both lower and upper extremities may be affected. The pain, tenderness and muscular weakness steadily increases, so that walking may become impossible. The anterior tibial nerve is especially affected in the lower extremities, thus giving rise to the foot drop, and consequently the steppage gait, as in infantile paralysis. When the upper extremities are affected the inflammation usually is located in the musculospiral and its branches, and gives rise to the wrist drop. Pain and tenderness exist, though there may be complete muscular paralysis, and this in itself is an important differential symptom from infantile paralysis and trans-

verse myelitis. This results in a flaccid paralysis, with much muscular atrophy. Sensory nerves may be affected by the inflammation at the same time, and this would cause pain, numbness, and finally tactile anaesthesia. The various sensory disturbances that are met with are pain, hyperaesthesia, tenderness, burning sensations, paraesthesia, numbness and anaesthesia. The reaction of degeneration may be noticeable very early in this disease, and indicates that the nerve substance has completely atrophied or is completely depleted, and is replaced by connective tissue, which presses upon the remains of the nerve substance. The reaction of degeneration is frequently written as De R. or R. D.

In infantile paralysis the onset is always sudden, with fever and a rapidly developing paraplegia, without much pain, or pain lasting but a short time. In infantile paralysis there is partial recovery, the continued paralysis being confined to one extremity, and that more often the right leg. Multiple neuritis is characterized by continued pain and tenderness, is usually bilateral, and more frequently affects adults.

SYMMETRICAL SPONTANEOUS ULNAR NEURITIS.

Definition.—An acute inflammation affecting both the ulnar nerves, characterized by pain, paralysis and atrophy.

Etiology.—This is caused by a local subluxation at A. P., as will be determined by vertebral palpation and nerve tracing. Nerve tracing reveals tenderness emitting from the seventh or eighth intervertebral foramen, extending outward over the shoulder and down the arm over the course of the nerves affected. Tenderness is very marked in this affection, and but slight pressure is required to produce tenderness.

Pathology.—There is inflammation of the ulnar nerve, the excessive heat producing relaxation of muscular fibres forming the vessel walls, and permitting hyperemia. Exu-

dation of serum occurs from the congested vessels, causing a softening of the nerve substance. The entire nerve is red and swollen. If the inflammation is acute and soon subsides, the structure of the nerve will be but little affected, but if the inflammation is continued or prolonged, the nervous tissue undergoes atrophy and the connective tissue hypertrophies, replacing the degenerated nerve elements.

Symptoms.—The onset is sudden, with pain, which may be moderate or severe, extending along the course of the affected nerves, and may be localized to a part of the nerve, or along its entire course. With the pain there may be numbness, burning sensations, tingling sensations, muscular weakness, and coldness of the arm and hand. These sensations may be increased in severity when the extremity is exposed to the cold, or when brought into contact with metallic substances. Later there may be inability to hold articles.

This differs from neuralgia in that tenderness is more pronounced, there is weakness and atrophy, all of which is absent in the neuralgia.

Goes from feet upward

ACUTE ASCENDING PARALYSIS.

Definition.—An ascending flaccid paralysis beginning in the feet and rapidly extending upward, involving the trunk, arms and muscles of respiration in the order named.

This is also called acute creeping paralysis and Landry's paralysis.

Etiology.—An atlas subluxation is the most important factor in the cause of acute ascending paralysis, but the local zone in which the paralysis begins should not be overlooked. It is possible that it could be caused by a cord impingement anywhere in the spine.

There is no nerve tracing in this condition.

Symptoms.—Weakness in the feet and legs is the first symptom to attract the attention of the patient. This weak-

ness extends rapidly, affecting both lower extremities. There is malaise, general prostration, and, possibly, a slight fever. After both legs become affected the spinal muscles become weak, and paralysis becomes manifest in the arms and neck. Swallowing may become difficult, mastication impossible, and the facial expression may be unchanged with change in the emotions. Later the respiratory muscles are involved, with dyspnoea, cyanosis and sub-oxidation of the tissues. The sensory function is not affected, as a rule, and death may occur in from one to four weeks.

There is a chronic form which begins with a slight degree of numbness in one foot, the numbness gradually extending upward to the knee, at which time the other foot becomes similarly affected. Walking becomes impossible, the girdle sensation is severe at times, and rectal and vesical anaesthesia is present, with retention of urine and constipation. The duration may be two or three years, death occurring when the paralysis involves the respiratory muscles and the heart.

PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS.

Definition.—A condition in which there is a decrease in the amount of power of the muscles, but an increase in their size.

Adjustment.—At., K. P. and local in the lower lumbar region.

Pathology.—The muscles become very bulky, but diminished in contractile power. The muscle substance is displaced by fat and connective tissue, and there is an infiltration of adipose tissue between the muscular fibres.

Symptoms.—The earliest symptom is the waddling gait, with muscular weakness and a marked tendency to stumble and fall. The muscles of the calf of the leg and the buttocks are greatly enlarged, while the spinal muscles and the muscles around the scapula undergo atrophy. Because of

the atrophy of the spinal muscles there is a lordosis in the lumbar region of the spine. In walking the pelvis is tilted by a swinging of the body while the foot is pushed forward. Upon palpation the muscles feel hard and non-elastic Sometimes the tongue becomes thick and hypertrophied. There may be great difficulty in walking and going upstairs. The reflexes are diminished or absent. Deformities of the feet frequently occur when affecting the young. Upon arising from the recumbent position the patient first arises upon all fours, straightening the knees and then raising the trunk. The duration is indefinite, and life may not be shortened by the paralysis.

ACUTE ANTERIOR POLYOMYELITIS.

Definition.—An acute inflammation of the anterior horns of the gray matter of the spinal cord, characterized by fever, flaccid paralysis and atrophy. This is also called infantile paralysis, infantile palsy, and myelitis of the anterior horns of the spinal cord. It is called infantile because it most frequently occurs in children during the first four years of life, but may affect adults as well.

Etiology.—Infantile paralysis is caused by a vertebral subluxation, usually the atlas, but may be located anywhere in the spine, which impinges either the spinal cord or nerves leading to it, and thus produces an inflammation of the anterior horns of the gray matter.

Pathology.—The inflammation of the anterior horns of the gray matter of the spinal cord produces a relaxation of the muscular fibres composing the blood vessel walls, thus permitting hyperemia, with a vascular exudation of serum into the nerve substance, making it soft and greatly swollen. Prolonged excessive heat in this location finally results in a drying and hardening of the nerve substance, and a proliferation of the connective tissue elements. The hypertrophied connective tissue, when it contracts, presses upon the nervous tissue and replaces it. The final condition being

Fig. 8.—*Case of infantile paralysis, showing foot drop.*

termed sclerosis. The degenerative state may exist anywhere in the spinal cord, but the usual location is in the dorso-lumbar enlargement. However, there are many cases in which it is located in the cervical enlargement of the cord.

There is no nerve tracing in a case of poliomyelitis, as the pathological condition lies within the neural canal of the spine.

Symptoms.—The disease begins suddenly, with spinal aching, malaise, and a fever of 100 to 102 degrees. The fever lasts from two to five days, during which time the skin is dry and hot, the tongue may be coated, the urine is scanty and highly-colored, the bowels are constipated, but occasionally there is diarrhoea, the appetite is poor, and vomiting may be present. Within a few days it will be noticed that the lower limbs are paralyzed, or possibly all four extremities, depending upon the part of the cord affected. As a rule, the bladder and rectum are not affected, and there is no anaesthesia, or, if present, is only temporary. During the first few days there is more or less spinal pain radiating into the legs. This is a flaccid paralysis, and is more noticeable in the muscles below the knee than in those of the thigh, and the anterior tibial muscles are especially affected, permitting the characteristic foot drop, so common to infantile paralysis. The affected extremities rapidly undergo atrophy or wasting, making the leg long and slender. The paralysis may subside or partially recover in the extremities least affected, leaving the one extremity totally paralyzed. This is usually the right leg. It fails to grow and usually becomes deformed, the child becoming club-footed; any of the forms of talipes developing.

If the leg should only be partially paralyzed, or if he should wear a brace in walking, a lateral curvature of the spine with a tilting of the pelvis will develop, because the affected limb will be shorter than the one on the unaffected side. This curvature is usually located in the lumbar region

and is purely adaptative. All that is required to remove such a curvature is to give a specific adjustment that will remove the paralysis and restore normal function to the legs. When in the sitting position the spine will straighten out, unless there should be ankylosis.

Infantile paralysis differs from myelitis, in that the sensory function is not involved, there are no bed sores, there is no vesical nor rectal anaesthesia, there is no girdle sensation, and the condition is usually unilateral.

It differs from peripheral neuritis, in that persistent pain and tenderness is absent, is unilateral, while multiple neuritis is bilateral, and the De R. appears late in infantile paralysis, while it appears early in neuritis. Atrophy occurs more rapidly and to a greater extent in infantile paralysis than in neuritis.

Restoration under Chiropractic adjustments is astonishingly rapid when given in the acute or early stages. Cases of long standing yield more slowly, as would be expected.

PROGRESSIVE MUSCULAR ATROPHY.

Definition.—A chronic incoordination in which the muscles become so greatly atrophied that they cannot perform their normal function.

Etiology.—This may be caused by a cord impingement at the atlas, or may be the result of deficient nutrition. If the latter is the case the adjustment would depend upon the findings of vertebral palpation, especially K. P.

Pathology.—The muscle decreases in bulk and elasticity. This is the result of atrophy of the muscular elements and an increase of the connective tissue elements.

Changes also occur in the spinal cord, and consist principally of a partial sclerosis of the anterior horns and the anterior nerve roots. In this, as in other scleroses, the nerve elements are destroyed and replaced by a hyperplasia

of the neuraglia or connective tissue, making the spinal cord hard and unable to properly perform its normal function of transmitting impulses and impressions from and to the brain.

Symptoms.—The onset is very slow, and when apparent, progresses slowly and gradually. This first noticeable symptom is a slight atrophy of the muscles of the hand, especially those of the thumb, causing a deformity known as the ape-hand, later becoming the claw-hand. This atrophy may be associated with slight pains, numbness and tingling, but sensation is not lost. The atrophy increases, involving the entire hand and forearm, after which it appears in the other hand and forearm. The motion of the fingers and arm are affected by this atrophy so that the hand cannot be flexed upon the wrist, nor can the fingers be properly extended.

The atrophy next appears in the muscles of the shoulders, extending from here to the deep muscles of the spine, so that it is difficult to walk or stoop and retain the equilibrium. Later the muscles of the thigh and leg are affected, and finally all the muscles of the body may be involved, except those of mastication and of the eyeball.

From the beginning there is some paralysis, the degree of which corresponds to the degree of the atrophy. There may be muscular twitching, consisting of wave-like movements of the muscles and skin. The sexual function is usually lost, and there is diarrhoea in most all cases. The skin is clammy, scaly, and may be more or less covered with sweat. There is often local areas of congestion or hyperemia.

GLOSSO-LABIO-LARYNGEAL PARALYSIS.

Definition.—A paralysis of the tongue, lips and laryngeal muscles, sometimes involving the eyelids, face and neck muscles.

Etiology.—This is caused by subluxations at atlas, lower cervical or S. P. regions of the spine.

Pathology.—In many cases no pathological condition exists other than that found in the affected muscles, which may become atrophied. Aside from these cases the pathological condition exists in the medulla, and for this reason is sometimes called bulbar paralysis. Certain tracts of the medulla undergo degeneration and sclerosis, which may extend into the roots of the nerves supplying the muscles paralyzed.

Symptoms.—The onset is usually gradual, but a few cases occur suddenly when due to apoplexy of the medulla. At first there is difficulty in articulation, especially of the linguals, such as l, t, d, and r, the difficulty steadily increasing. With this there is difficulty in chewing and swallowing, as the tongue fails to properly place the food between the teeth to be masticated, and is unable to push the bolus backward so that the pharyngeal muscles can complete the act. Next, the lips become paralyzed and speech is still more indistinct, the mouth remains open, the saliva dribbles from the mouth, swallowing is difficult, solid food is eaten with great difficulty, the facial expression of the lower part of the face does not change with a change of the emotions, the sense of taste is lost, the throat is dry and stiff, the voice becomes nasal in character, fluids regurgitate through the nose in the attempt to swallow, and the ability to produce voice is greatly diminished. When the eyelids are affected the eyes remain open and the conjunctiva may become red and inflamed. Occasionally the neck and arms are involved, and the affected muscles become atrophied.

PROGRESSIVE OPHTHALMOPLEGIA.

Definition.—A chronic form of paralysis, progressive in character, in which the muscles of the eyeball are involved.

Etiology.—This is caused by subluxations at fourth cervical and S. P.

Pathology.—This paralysis usually affects the two internal recti muscles and the elevator palpebrae superioris. The affected muscles lose their tonicity, become thin and stretched, due to the lack of motor expression.

Symptoms.—The onset is very gradual, the first symptom being a limitation in the movability of the eyeball in watching moving objects. Following this it will be noticed that a slight strabismus has developed, which is of the divergent form, due to the tension of the unaffected external recti muscles. There is diplopia or double vision, a drooping of the eyelids, and a peculiar expression of the face known as Hutchinson's face. As a rule, vision is not impaired, but may be interfered with by the ptosis of the eyelids.

AMYTROPHIC LATERAL SCLEROSIS.

Definition.—A sclerosis of the lateral columns of the spinal cord, characterized by paralysis and atrophy of certain muscles.

Adjustment.—Atlas and lower cervical region.

Pathology.—The inflammation is chronic in character, and lies in the white matter and in the lateral columns. The blood vessels become hyperemic, and a slow vascular exudation results. The effect of the prolonged excessive heat is such that the nerve substance becomes dried and hard, the connective tissue proliferates and replaces the nervous tissue, and the function of the cord is impaired. The inflammation may be located in any portion of the cord.

Symptoms.—This begins with a sensation of weariness and heaviness in the legs, progressing until a paraplegia is reached, or it may begin in the arms. Since the sclerosis is more frequently located in the cervical part of the cord, the first symptoms usually appear in the arms. The

muscles become more rigid or spastic as the paralysis increases. If walking is possible, the spastic gait is present, the patient walking by tilting the pelvis while pushing one foot forward, the toes drag on the ground, and the patient has a tendency to fall forward. The arms are involved by the paralysis, they becoming stiff and atrophied. The tongue becomes stiff and numb, swallowing is difficult, chewing is impossible, and the patient becomes entirely helpless. The knee-jerk is exaggerated and sensation is not affected.

MYELITIS.

Definition.—An inflammation of the substance of the spinal cord, characterized by deep-seated, burning pain and muscular paralysis.

Adjustment.—Atlas, C. P. and K. P.

Pathology.—The excessive heat in the substance of the cord produces hyperemia and exudation, making the nervous tissue soft and creamy. Prolonged heat causes drying and hardening of the nerve tissue, proliferation of the connective tissue so that it presses upon and replaces the nerve substance. It may be localized in any portion of the cord, but usually in the dorso-lumbar enlargement.

Symptoms.—When the gray matter alone is affected it is called central myelitis; when the white matter alone is affected it is called cortical myelitis, and when both gray and white matter are affected it is called transverse myelitis.

Transverse myelitis is the most common variety, and usually begins with deep-seated spinal pain, aching in the legs and feet, general muscular weakness, and a slight fever of about 103 degrees. The patient complains of a feeling of needles and pins, formication, hyperaesthesia along the spine, and a sense of constriction around legs or trunk opposite the site of the degeneration. This latter symptom is also called the girdle sensation.

The fever lasts but a few days, during which the paralysis develops and may become complete within three or four days. This paralysis is usually a paraplegia, but may also affect the arms, depending upon the part of the spinal cord affected. In transverse myelitis both the sensory and motor functions are affected, producing tactile anesthesia as well as muscular paralysis. There is rectal and vesical anesthesia, thus retention of urine and constipation. Atrophy may be present, and the nutritive nerves are affected, but often the muscles retain a good size and are spastic. Bed sores and sloughs form upon the parts coming in contact with the bed, and may appear as early as the second or third week. The reaction of degeneration is present in those cases in which the process of depletion or sclerosis is complete. This occurs when the nervous tissue in the spinal cord atrophies and is pressed upon by the hypertrophied connective tissue. There are cases that partially recover of their own accord, and are characterized by a spastic gait, tenderness, pain, and burning sensations in the extremities affected. If the degeneration is great in the cord the respiratory muscles and the upper extremities are affected. Dyspnoea, dysphagia and irregularity of the heart's action may be more or less present.

Acute transverse myelitis differs from multiple neuritis and infantile paralysis in that both motor and sensory paralysis exists, the paralysis is spastic, there is rectal and vesical anaesthesia, girdle sensation, decubitus occurring early and with pain only at the onset. Bed sore

CHRONIC MYELITIS.

Definition.—A prolongation or continuation of the acute form, or may be a slow hardening of the spinal cord from a chronic inflammation.

Adjustment.—Atlas, C. P., and K. P.

Pathology.—The pathology of chronic myelitis is identical with that of the acute form except that it may occur

more slowly and have less exudation of serum into the substance of the cord.

Symptoms.—If a prolongation of the acute attack, the symptoms are as described in the previous topic. If due to a slowly progressing inflammation, the onset is gradual with a feeling of weakness and heaviness in the legs and feet. The legs may ache and tire easily. There is numbness and prickling sensations, the girdle sensation is present, the legs stiffen, the spastic gait is present, the girdle sensation is annoying, there is slight pain in the spinal region, the sphincters of the bladder and rectum are affected, and atrophy finally occurs. This atrophy affects principally the connective tissues, as the muscles may remain fairly well developed. The patient may finally become bedridden, and have sloughing bed sores. Sensory paralysis is as complete as is the motor.

SPINA BIFIDA.

Definition.—An incoordination of the spine in which the posterior arch of the neural canal fails to ossify, and is characterized by a protrusion of the meninges of the spinal cord with the accumulation of serum.

Adjustment.—Atlas or a cord pressure locally above the cleft in the spine.

Pathology.—There are three pathological conditions in spina bifida, viz., meningocele meningo-myelocele and syringo-myelocele. In all forms the lamina fail to unite to form the spinous process, thus leaving the posterior surface of the spinal cord unprotected by bone. This cleft condition of the spine usually affects the lower lumbar and upper sacral segments.

In meningocele, which is the most common condition, there is a protrusion of the meninges, consisting of one or more of its layers and containing serum, varying in size from one to six inches in diameter.

In meningo-myelocele there is a protrusion of the spinal cord and the meninges. The palpable tumor is much less in size than the simple meningocele.

In syringo-myelocele the posterior half of the cord protrudes with the meninges to form the tumor, and the central canal of the cord is dilated, containing the serum. This is also small in size, and is uncommon.

Symptoms.—The development of the tumor is slow, and no symptoms may be observable until it attains sufficient size to attract the attention of the patient, or until it is capable of producing symptoms. The child fails to grow in size and strength as it ordinarily should, and is usually undeveloped mentally. The tumor can be seen upon inspection; the skin over the tumor is glossy and tense, a kyphosis develops, the patient walks in a stooped posture, the region of the lower spine is very tender upon palpation, and finally a paraplegia develops. Most cases having either of the three above named pathological conditions die before reaching the twentieth year.

MENINGEAL HEMORRHAGE.

Definition.—A hemorrhage or oozing of blood from the capillaries into the meninges of the brain or spinal cord.

Adjustment.—Atlas or local.

Pathology.—The hemorrhage may be the result of traumatism, as in fracture of the skull, in which case there is an accummulation of blood between the dura mater and the cranial bones. It may occur spontaneously when there is a lack of motor function being expressed in the muscular fibres forming the vessel walls. The vessel walls become greatly relaxed, prolapsed and their fibres separate, allowing the escape of blood into the meningeal spaces.

Symptoms.—The symptoms will vary with the size and location of the hemorrhage. The onset is sudden, with severe pain in the spine and great tenderness along the

course of the superficial nerves arising from the part of the cord affected. There is numbness and tingling, which, together with the pain, radiate downward to the lower extremities. Hyperaesthesia becomes general below the point of hemorrhage and there are muscular incoordination, consisting of twitching, spasms or paralysis. The height of the symptoms of the hemorrhage is reached within a few hours and then partially subside. The final result is a partial paralysis.

If the hemorrhage is in the cerebral meninges there is hemiplegia, with delirium, stupor, convlusions, impaired function of the pupils, and if large, will terminate with the symptoms of collapse and death.

HEMATOMYELIA.

Definition.—Also known as apoplexy of the spinal cord, and is a hemorrhage occurring suddenly into the substance of the spinal cord.

Adjustment.—Atlas or local.

Pathology.—The vertebral subluxation produces pressure upon nerves conveying the motor function to the minute muscular fibres forming the blood vessel walls, causing them to lose their tonicity and relax. The degree of relaxation is so great that the fibres become slightly separated, permitting the blood to ooze between the fibres into the cord substance. The pressure produced upon the delicate nervous tissue of the cord by the effused blood is sufficient to prevent normal function, and gives rise to the following symptoms:

Symptoms.—The onset is sudden, with pain, numbness, and tingling throughout the course of the nerves radiating from the point of hemorrhage. The pain may be severe and acute at the onset, but gradually lessens as the hemorrhage increases, while paralysis becomes more pronounced and may become complete within a short time. The paraly-

sis is usually motor, but may also be sensory, and if the hemorrhage occurs in the dorsal or lumbar cord no further symptoms may arise. If the hemorrhage should occur in the cervical cord the paralysis may be in the form of a hemiplegia, affecting the face, arms, and legs. There may be a transitory loss of consciousness or apoplectic coma. Soon the sensory disturbances subside, especially the pain, and a motor paralysis results. The paralysis is more severe than in meningeal hemorrhage, and the pain is less.

TUMOR OF THE SPINAL CORD.

Definition.—An excessive accumulation of tissue cells upon the spinal cord or its membranes within the neural canal.

Adjustment.—Atlas or axis, with K. P.

Pathology.—This may be a simple tumor or it may be malignant, either carcinoma, sarcoma or a glioma. Sometimes the tumor consists of gummatous material, the product of syphilitic degeneration, and called a gumma. Gumma and glioma occur more frequently, undergoing degeneration and pressing upon the cord, having the same effect as a cord pressure.

Symptoms.—The symptoms are the same as a cord impingement at the point where the tumor is located, and will vary with the location of the tumor. A severe pain located in the spinal region at the point of pressure is a continuous symptom during the early stages. Later the girdle sensation develops, and is very annoying to the patient. There is hyperaesthesia over a region opposite to the pressure and anaesthesia below. One side alone may be affected or both sides may be unequally affected, depending upon the location of the tumor and the manner in which it constricts the cord. Paralysis always develops, usually progressing slowly in proportion to the rapidity of the growth of the tumor. If the tumor is located in the cervical or upper

portion of the cord the face, arms, larynx, and thorax will be affected. Brown-Sequard paraylsis sometimes occurs.

The adjustment at the atlas will stop further growth and development of cells, and will start a process of reparation in the part affected, in which a slow disintegration of the cells will occur. The adjustment at K. P. will assist the elimination of the waste material which is absorbed from the destroyed growth.

SYRINGOMYELIA.

Definition.—An incoordination in which there is the formation of cavities in the spinal cord, characterized by paralysis, atrophy, and insensibility to pain.

Adjustment.—Atlas or axis.

Pathology.—There is the presence of one or more tubular cavities extending from the central canal into the substance of the spinal cord. This occurs in the cervical portion of the cord, and is believed to be the result of improper closure of the posterior division of the canal during early life, which would be caused by the atlas subluxation. The name syringomyelia is taken from syrinx meaning tube, and myelos meaning marrow; hence a tube or cavity in the marrow or spinal cord.

Symptoms.—The onset is very gradual, with aching pains in the neck and arms, followed by weakness and atrophy of the muscles. The pain, however, soon subsides, after which the sense of pain, heat, and cold is lost. Although there is anaesthesia to temperature and to pain, still tactile sensation is retained. The affection is usually bilateral, and extends from the arms, hands, and neck to the spinal muscles, and spinal curvatures develop as a result of the muscular weakness. The skin is dry, in some cases sweaty and clammy; the hands are red, and skin eruptions may occur. Later a severe paralysis results, with nutritional defects, characterized by spontaneous fractures of the epiphysis

from the shaft of long bones, and superficial ulcerations similar to the bed sores of myelitis. There are usually deformities of the joints. Morvan's disease, in which there is great deformity of the hands, is usually a result of syringomyelia. The duration may cover a period of several years.

LOCOMOTOR ATAXIA.

Definition.—An incoordination in which there is a slow inflammatory degeneration of the posterior columns of the spinal cord, characterized by sensory and trophic disturbances.

Adjustment.—Atlas or axis, with K. P. The upper cervical subluxation interferes with the calorific and trophic impulses of the posterior columns of the spinal cord, the result of which is sclerosis.

Pathology.—The site of the degeneration may be located in any portion of the cord, and also the afferent spinal nerve roots, but is usually situated in the dorso-lumbar enlargement. The nerve fibres of the cord are first affected, they becoming swollen, inflamed, and hyperemic. The axis cylinder is also swollen, and sometimes the surrounding membranes are inflamed and congested. This is especially true of the pia mater. The connective tissue proliferates and presses upon the nervous substance so that it atrophies and is replaced by the hypertrophied connective tissue. The posterior nerve roots and posterior nerve root ganglia especially suffer from this degenerative process. Many of the peripheral nerves undergo similar changes. The optic is affected more than any other single nerve. Sight is interfered with in over sixty per cent of cases, and complete atrophy occurs in six per cent of all cases.

There is no nerve tracing in locomotor ataxia.

Symptoms.—The symptoms are divided or classified intc three stages—the initial, pre-ataxia or stage of sensory disturbances, the second or ataxic stage, and the third or paralytic stage.

The initial or incipient stage begins with lightening-like pains of a moment's duration, and felt most commonly in the legs and feet, but they may occur in the arms, trunk, or head. Herpes may occur along the course of these nerves or at the site of the pains. Paraesthesia, such as burning, tingling, and formication, are common over the lower extremities, and in walking the patient feels as if he is walking upon a thick carpet, or that his shoes have thick cork soles. This is due to the loss of sensation, or numbness. If the cervical cord is affected similar symptoms will be noticeable in the arms, and the patient will have difficulty in buttoning his clothing. During this stage there is a great inclination on the part of the patient to sit with his feet raised to a level with the hips. Vertigo is common, and vision may be slightly affected during this stage.

The ataxic stage may last for several years, and begins when walking is so greatly interfered with that the ataxic gait is present. During this stage the lightning-like pains occur with less frequency, the knee jerk is lost, the girdle sensation is present, blurring of vision becomes common, numbness of the feet increases, the skin becomes dry and scaly, and the sexual function may be lost. In walking the feet are placed far apart, the patient stands in a stooped position, and the feet are raised unusually high, thrown far forward, and brought down hesitantly with the sole first. During this stage anaesthesia becomes so marked that the patient is unable to locate his feet without the use of sight; diplopia is common, and rectal neuralgia occurs frequently.

The Argyll-Robertson pupil is a cardinal symptom in the analysis, and is one in which the pupil accommodates itself to distance but not to light. This condition can be determined by placing two objects in line with each other, one object being placed about two feet from the patient, and the other twenty feet from the patient. After looking at the close object he should change and look at the far object, and it will be noticed there is a change in the pupil, as in the

normal eye; but if the degree of light is suddenly changed there is no change in the size of the pupil as in the normal.

Romberg's sign is present also, and is determined by blindfolding the patient while standing in the erect position. It will be seen that he sways to exceed one and one-half inches, and in most cases will fall. With the eyes closed, and the arm extended he is unable to place the tip of the finger upon the tip of the nose. With the eyes closed and both arms extended he is unable to bring the tips of the forefingers together.

Vision is poor in most all cases during this stage, and blindness, due to optic atrophy, occurs in six per cent of all cases. The neuralgic pain may also be present in the head and arms, but is less common than in the legs.

The inability to coordinate muscular action is due entirely to the loss of sensation in this stage, as the power of the muscles is as great as in health. However, emaciation may be quite marked, and deformities of the joints may occur. When the patient is lying flat upon the back with the thighs at right angles to the trunk the leg can be entirely straightened, which is rarely possible in the normal.

At times there may be marked gastric and intestinal symptoms, consisting of severe vomiting, rectal and gastric pains, and disturbed flow of urine; this is commonly spoken of as the gastric crisis.

The final stage is called the paralytic stage, and is characterized by paralysis, which is complete. The sexual function is abolished, and atrophy of all parts of the body occurs. With this paralysis there may be dementia or other cerebral symptoms, but, as a rule, they are not present.

The cardinal symptoms of locomotor ataxi are loss of the knee jerk, lightening-like pains, Rhomberg sign, Argyll-Robertson pupil, loss of sensation, and the ataxic gait. The condition is usually readily recognized.

Locomotor ataxia is also called tabes dorsalis, and posterior spinal sclerosis.

SPASTIC SPINAL PARALYSIS.

Definition.—A sclerosis or hardening of the lateral white columns of the spinal cord, characterized by a spastic paraplegia.

Adjustment.—This is produced by an atlas or axis subluxation, but local subluxations may necessarily be included in the adjustment, as will be determined by vertebral palpation.

Pathology.—The pathology of spastic spinal paralysis is the same as that of lateral sclerosis, and when affecting adults is usually considered the same. The infantile form is also called Little's disease. The nerve substance in the lateral columns becomes atrophied, the neuroglia proliferates, presses upon and replaces the nerve substance. This condition may be localized or may extend over the entire length of the cord.

Symptoms.—At the onset the patient complains of a feeling of tiredness and stiffness in the legs with some aching pain in the back. The muscles become weak and stiff so that the spastic gait develops. In infants the onset may be with a convulsion, after which the child does not appear to be itself. As a rule it does not learn to walk, dentition is delayed, and the child may not learn to speak. The arms and legs are extended, and in the attempt to walk the legs cross and the child falls. In all cases the legs are stiff, the knees drawn close together, the legs are moved stiffly and with hesitation, and the toes drag and catch on the ground.

Under Chiropractic adjustments the pressure upon the cord or nerves effecting this condition is removed and coordination is restored.

THE COMBINED SCLEROSES.

Definition.—This term is applied to certain forms of incoordinations in which various columns and tracts of the spinal cord undergo degenerative changes. Usually it affects the posterior and lateral columns.

Etiology.—This may be caused by any local subluxation, as would be determined by the symptoms and palpation, but is usually caused by a subluxation of the atlas or axis. K. P. should be included in the adjustment.

Pathology.—This disease usually affects the posterior and lateral columns, and begins with chronic inflammation, in which the vessels of the cord become hyperemic, the white substance becomes swollen, the neuroglia becomes thickened, pressing upon the nerve substance and replacing it. The sheath of the nerves becomes broken, the axis cylinder destroyed, and the part of the cord affected loses its normal function. This may begin in one tract and later appear in other parts, as can be determined by the symptoms.

Symptoms.—The onset will vary according to part of the cord first involved. If the degeneration begins in the lateral columns, which it usually does, the onset will be with a feeling of weight, weakness and partial paralysis of the lower extermities. This weakness and feeling of discomfort increases, extending upward over both lower extremities and to the spinal muscles. The legs will be stiff, and the knee jerk will be exaggerated. If the degeneration lies in the cervical part of the cord the arms will be affected in a similar manner as the legs. The girdle sensation is present, and there may be slight emaciation. As soon as the posterior columns become affected the lower extremities become numb, there are scattered patches of anaesthesia, the knee jerk may be lost, muscular spasticity will lessen, and vision is interfered with, diplopia being the principal disturbance. There is diarrhoea of the bowels, ankle clonus, ataxic gait, and a paraplegia involving both the motor and sensory functions. Occasionally the anterior horns of the gray matter

will be affected, and in those cases there is marked atrophy of the muscles. It usually requires several years for the affection to reach its height, after which it becomes stationary.

EXTERNAL MENINGITIS.

Definition.—An inflammation or excessive heat affecting the external or outer layers of the meninges of the spinal cord.

Etiology.—This is caused by an atlas or axis subluxation, but C. P. and K. P. should be included in the adjustment when there is fever. Meningitis could be caused by a local subluxation anywhere in the spine, but is not so common as that produced by the atlas.

Nerve-Tracing.—There is no definite nerve-tracing in meningitis, on account of the abnormal condition lying within the neural canal, but tenderness is extreme and diffuse along the spine.

Pathology.—The meninges become inflamed and swollen, their blood vessels are dilated and over-filled with blood, and there is an exudation into the neural canal and into the intermeningeal spaces, which produces pressure upon the cord and is responsible for many of the symptoms that arise. The dura mater is the layer affected in external meningitis.

Symptoms.—The onset is with severe spinal pain, which radiates along the course of the spinal nerves over the trunk and legs. Hyperaesthesia is very marked along the spine, and is general in its distribution. Clonic spasms of various groups of muscles are present, and in the more severe cases there is a partial paralysis, usually in the form of a paraplegia. The muscles affected are stiff, and become atrophied.

During the course of the meningitis, and especially early, there is fever of 100 to 102 degrees, with gastric and intestinal disturbances, scanty and highly-colored urine, coated tongue, and general weakness.

The atlas subluxation causes pressure upon the nerves having to do with the transmission of the calorific function, producing its abnormal expression in the form of excessive heat. The atlas adjustment releases this pressure, permitting a normal flow of calorific impulses, whereby the heat of the meninges is restored to normal, and all symptoms disappear.

ACUTE SPINAL LEPTOMENINGITIS.

Definition.—An acute inflammation or excessive heat of the thin membranes of the spinal cord, affecting the pia and the arachnoid membranes.

Etiology.—As in the external form, this is caused by an atlas or axis subluxation interfering with the flow of calorific impulses and producing excessive heat. C. P. and K. P. should likewise be included in the adjustment.

Pathology.—In this form of meningitis the inflammation is limited to the thin layers of the membranes of the cord, usually affecting the pia mater. It becomes swollen and red from the hyperemic blood vessels. Exudation occurs from the membrane into the intermeningeal spaces and presses upon the cord substance. If the pressure at the atlas is sufficient it may produce myelitis in combination with the meningitis. The condition is then known as meningo-myelitis.

Symptoms.—Since the pia mater is nearer to the cord than the dura, there is a greater degree of paralysis and less pain in leptomengitis than in external meningitis. This begins with radiating pain in the back and extremities, tenderness along the nerve trunks, stiffness of the spinal and other muscles, and an initial chill which is followed by a slight fever of about 102 degrees. There is a marked rigidity of the spinal muscles, which produces cervical retraction, and sometimes amounts to opisthotonus. The muscles finally become atrophied but may remain spastic, the sensory function may be dulled, and the patient is left in a state of paralysis which pursues a chronic course.

(Exudative Meningitis)

SEROUS MENINGITIS OF THE BRAIN.

Definition.—As its name implies, is an inflammation of the membranes surrounding the brain, accompanied with an effusion of serum. Also known as exudative meningitis.

Adjustment.—Atlas or axis, C. P., and K. P.

Pathology.—The atlas or axis subluxation causes the inflammation or excessive heat in the meninges of the brain. Excessive heat is characterized by swelling of the membranes, hyperemia of the blood vessels and exudation of serum. In cerebral meningitis this effusion is large and presses upon the brain, producing many cerebral symptoms. The condition may be localized or affect the entire meninges of the brain.

Symptoms.—This begins with a severe headache, spinal pain, chill, and a fever varying from 102 to 105 degrees. With the rise in the temperature the cerebral symptoms are manifest, and consist principally of a low muttering delirium. At times the delirium will be replaced by stupor. There is cutaneous hyperaesthesia over the entire body, the legs, arms, and neck are stiff. There is cervical retraction, opisthotonus, ptosis of the eyelids, a brown-coated tongue, dilatation of the pupils, and in children convulsions. Vomiting is often severe and persistent, even though the stomach is empty. Paralysis ensues, involving all the muscles of the body, with a severe degree of prostration.

The adjustment of the atlas relieves the pressure upon the nerves leading to the meninges of the brain, thus restoring the calorific function to normal, whereupon the hyperemia and swelling subside, and coordination rapidly supervenes.

APOPLEXY.

Definition.—An effusion of blood occurring suddenly into the substance of an organ. Intercranial apoplexy is a hemorrhage occurring within the skull. Cerebral apoplexy is hemorrhage into the substance of the cerebrum. Cere-

Fig. 9.—*Case of hemiplegia, showing characteristic posture and contraction of arm.*

bellar apoplexy is hemorrhage into the substance of the cerebellum. Pial apoplexy is hemorrhage into the substance of the pia mater. Pons apoplexy is a hemorrhage into the substance of the pons.

Etiology.—The cause of intercranial apoplexy is an atlas or axis subluxation which impinges the nerves conveying the motor function to the muscular fibres of the blood vessels of the brain or cranial viscera, causing these muscle fibres to relax, and permitting the blood to ooze out between the fibres into the surrounding tissue. Most frequently occurs in vessels whose elasticity is slight, and in individuals who have a high blood pressure.

Pathology.—The blood vessel walls may be hard, and the muscular fibres be inelastic. The blood pressure is usually high. The local subluxation reduces the amount of motor function expressed in the muscular fibres so that they are relaxed and inelastic. The minute muscular fibres become prolapsed, and separate so as to permit the escape of blood. The brain substance being soft, is easily displaced and pressed upon by the clot, which renders the part functionless, and produces a motor paralysis of all parts of the body supplied by nerves arising from the affected portion of the brain. Hemorrhage of the brain most frequently occurs from the middle cerebral artery or its branches. Meningeal apoplexy most frequently occurs at the base of the brain from the basilar artery.

Symptoms.—This is more commonly known as a "paralytic stroke." When occurring gradually there are prodromal symptoms, consisting of headache, vertigo, pains in the head, and numbness or tingling in the extremities. Following this there may be vomiting and hemiplegia. Most cases, however, occur suddenly, when the blood is suddenly effused into the substance of the brain. It may begin with a sudden pain in the head, and the patient will fall into a state of apoplectic coma. In a few cases the coma may be attended with convulsions, but usually they are

absent. The respirations are slow, noisy, and irregular, Cheyne-Stokes type being frequently present. The pulse is full and slow, and the cheeks puff out with expiration. The pupils are unequally dilated, and one side of the body is paralyzed. The hemiplegia is of the side opposite to the side of the hemorrhage, except of the face, which may be paralyzed on the side of the hemorrhage. There may be conjugate deviation of the eyes and head toward the side of the hemorrhage. The paralysis of the face may be determined by smoothing out the wrinkles of the face, and it will be noticed that one side returns to its normal shape more rapidly than the other, and by raising the leg or arm and permitting them to drop it will be seen that the paralyzed extremity drops as if dead. There is usually a slight fever of 100 to 101 degrees, the paralyzed side being one or two degrees warmer than the unaffected side. In fatal cases the temperature may suddenly rise to 106 degrees, and death soon follows.

The majority of cases are not fatal; in those that recover the coma disappears in from five hours to five or six days, after which there is great weakness, mental confusion, disturbances of speech, and hemiplegia. The severity of this paralysis depends upon the extent of the hemorrhage into the brain. Both motor and sensory function may be affected during the early stages, but the sensory function is soon restored. The face on the side of the hemorrhage, and the arm and leg on the opposite side, are involved in the hemiplegia. The paralysis may entirely disappear from the face within the first two weeks, and will be gradually diminished in the leg during the first six months. The arm improves the least of any part. Finally the paralysis becomes stationary, and the muscles become rigid and stiff. The shoulder on the affected side droops, and in walking the patient has the characteristic mowing gait, the foot being swung around in walking. There is but very slight atrophy of the muscles, and there may be tremor, and occasional aching pains in the paralyzed extremities.

The adjustment of the atlas restores normal tonicity in the muscular fibres of the cerebral vessels so that their walls are strengthened and hemorrhage is stopped. The blood that is already effused into the cerebrum is gradually absorbed, whereupon the paralysis subsides. Cases of apoplectic hemiplegia have completely recovered after receiving thirty adjustments. Results are more favorable if the case is obtained before the muscles become spastic.

ACUTE SOFTENING OF THE BRAIN.

Definition.—An incoordination in which there is a degenerative change or softening of the cerebral tissue, accompanied by embolism or thrombosis of the cerebral vessels.

Adjustment.—The embolism or thrombosis is caused by an atlas subluxation, but K. P. should be included in the adjustment so as to assist in the absorption of serum that has been effused into the brain.

Pathology.—The thrombosis and embolism usually affects the terminal branches of the middle cerebral artery. If the affected branch has anastomoses the collateral circulation compensates for the obstruction, and no anatomical change develops, but if an end artery or vein is obstructed, the blood beyond the point of anastomoses coagulates and the serum oozes through the vessel walls into the cerebral tissue. The added quantity of serum makes the brain tissue abnormally soft, and if serum only oozes through the vessel walls, the result is yellowish-white softening. When the relaxation of the walls is sufficient to permit the escape of red blood cells it is called red softening. In such cases the red cells undergo disintegration, losing their haemoglobin, and turning into yellow or white softening.

Thrombosis affects the veins more frequently than the arteries, and when such is the case the onset is slow, as the thrombus is the result of a thickening of the tunica intima. Embolism always affects the arteries and occurs suddenly,

as it is carried by the blood stream, and when stopped because of a decrease in the size of the vessel, gives rise to sudden symptoms.

Symptoms.—Embolism is common in apoplexy, or rather apoplexy usually follows embolism, and the symptoms of the two are about the same. Thrombosis, which is common and gradual, begins with headache, vertigo and loss of the memory. The mentality of the patient is affected, as is indicated by the change in his character, despondency, and absentmindedness. The vision is impaired, and speech is slow and hesitating. Walking is greatly hindered, and soon paralysis develops. The paralysis is often in the form of a hemiplegia, and, as a rule, develops gradually. It may involve motor or both sensory and motor functions. The paralysis is followed by dementia, which progresses slowly, as does the paralysis, often requiring many months or years to reach its height.

HEMORRHAGIC ENCEPHALITIS.

Definition.—An acute inflammation or excessive heat in the brain tissue, which is accompanied by hemorrhage.

Adjustment.—The atlas should be adjusted to restore the normal transmission and expression of calorific impulses in the brain and to restore the normal expression of motor impulses in the muscular fibres of the blood vessels. When this is accomplished both the inflammation and the hemorrhage will stop.

Pathology.—As a result of the inflammation the cerebral vessels are congested and the vascular exudation into the brain substance produces swelling and softening. The vessel walls are relaxed because of lack of motor power, their muscular fibres separate, and the blood oozes into the adjacent tissue. This most commonly occurs in connection with suppurative encephalitis or abscess of the brain.

Symptoms.—The onset is sudden, with severe headache, spinal pain, cervical retraction, photophobia, vertigo, and high fever. The skin is hot and dry, the pulse is bounding and rapid, the respirations are shallow and accelerated, the tongue is heavily coated, gastric and intestinal disturbances are present, and the patient is delirious. The fever becomes irregular, with extreme prostration and finally stupor, coma and paralysis supervene. The paralysis affects deglutition, speech, and the skeletal muscles in general, or sometimes only as a hemiplegia.

ABSCESS OF THE BRAIN.

Definition.—An incoordination in which there is a circumscribed accumulation of pus in the brain surrounded by a pyogenic membrane.

Adjustment.—Atlas, C. P. and K. P.

Pathology.—There may be one or more abscesses of varying size located in various portions of the brain. This begins with inflammation or excessive heat, which becomes suppurative in character, forming pus, which accumulates in the brain. In order to prolong life and prevent the destructive effect of the suppurative inflammation, Innate builds a wall of connective tissue around the pus area, called a pyogenic membrane. Upon this pyogenic membrane will be found many white cells, principally phagocytes. The brain cells within this pus-forming area will be destroyed and transformed into pus.

There is marked tenderness upon the scalp over the region, which may be traced to atlas or axis upon nerve tracing.

Symptoms.—This begins rather suddenly in most cases, with intense headache of a throbbing character, mental dullness, vertigo and irregular fever. Vomiting, which is of the most persistent character, results from the pressure upon the vomiting center in the brain, and motor and sensory

disturbances may result from the same cause. The toxic symptoms are characterized by the irregular fever, delirium, stupor and coma, and by the general signs of serous poisoning. As a result of the destruction of certain portions of the brain there is paralysis, aphasia, and, possibly, convulsions; the motor paralysis varying according to the location of the abscess in the brain and the centers in the brain involved by the destruction. C. P. and K. P. are adjusted to reduce the fever and eliminate poison from the body, and the atlas adjustment restores normal function to the local inflammation of the brain.

HYDROCEPHALUS.

Definition.—Hydrocephalus is an accumulation of water or serum within the cranium, and is also known as dropsy of the brain, water on the brain, or ventricular distention.

Adjustment.—Atlas or axis with K. P.

Pathology.—The serum or cerebro-spinal fluid may accumulate between the layers of the meninges, or between the meninges and the brain, but in most cases the bulk of the accumulated fluid is in the ventricles, and may vary from an ounce to a pint. Some authorities believe there is an obstruction existing in the upper portion of the central canal of the spinal cord which prevents the communication between the ventricles and canal, thus producing the excess accumulation in the ventricles of the brain. The head becomes large, the fontanels fail to ossify, and the membranes covering them are distended by the endocranial pressure.

Symptoms.—This disease occurs more frequently in males, and usually appears during the first year in life, which may be accounted for from the fact that the male infant is larger than the female, thus causing a more difficult childbirth, at which time the atlas subluxation is caused, hence the early appearance of the symptoms.

The child becomes irritable and his head enlarges. The posterior fontanel, which should normally close during the second month of life, fails to close, and the anterior fontanel, which should normally close during the twenty-second month, also fails to close, and the membranes covering them bulge. The head is large and globular, and the normal symmetry of the head and face is lost. If the condition has developed early in life the child may not learn to walk. The general nutrition is impaired, vomiting may be severe and persistent, from the pressure upon the brain, and defects in vision, either diplopia or blindness, may occur. In the late stages there are convulsions, with increased severity of previous symptoms.

INFANTILE CEREBRAL PALSY.

Definition.—A form of paralysis developing shortly after birth, in which there is abnormal development of various areas of the brain.

Adjustment.—The specific adjustment for cerebral palsy is atlas or axis.

Symptoms.—The atlas or axis subluxation produces pressure upon the nerves connecting the Innate and educated portions of the brain, and upon the motor nerves leading to the muscles of the body. Although this pressure may have been produced at birth the symptoms may not appear for several weeks. However, they usually appear with a convulsion, or multiple convulsions, which may have been preceded by a period of restlessness and irritability of the child. The convulsions may be general or localized to one side of the child, and is accompanied with fever for a few days. Before the fever subsides it will be found that the child is paralyzed, usually on one side, affecting the arm, leg and face. The growth of the paralyzed side is retarded, the muscles become rigid and are cold. From the contractures of the leg muscles club foot may develop. The deformity may be talipes equinis, varus, valgus or calcane-

Knockkneed

Bowlegged

ous, or combinations of these. The deformity of the hand may result in the claw-hand, in which the thumb is flexed into the palm of the hand, the hand is extended and the distal phlanges are flexed. There is a lack of mental development, and the head is frequently abnormally shaped, either large, small or irregular. The teeth appear late and are usually deformed, speech may be indistinct, the voice is childish, the thoughts are immature, the mind is feeble, and the result is imbecility or idiocy, with hemiplegia or diplegia. When obtained early they usually recover under the proper Chiropractic adjustments, but when advanced and old the deformity is permanent.

TUMOR OF THE BRAIN.

Definition.—An abnormal over-development of a part of the cerebrum, or a hyperplasia of the connective tissue within the cranium.

Adjustment.—Atlas or axis, with K. P.

Pathology.—This may be a simple tumor in which there is an over-abundance in the production of cells in a part of the brain, the result being a cerebral tumor, or it may be a similar condition affecting the meninges or blood vessels of the brain. The tubercle of tuberculosis and the gumma of syphilis are also common tumors of the brain. The tubercle has the same pathological consistency as previously described under tuberculosis, and the gumma the same as previously described under syphilis. (See Tuberculosis and Syphilis.) The tumor presses upon the brain and thus produces the symptoms.

Symptoms.—The symptoms will vary according to the size and location of the tumor and the disease with which it may be associated. The first noticeable symptom is headache, localized at the point of the tumor, and is continuous in its duration. Vertigo and disturbances of the special senses are always constant symptoms, and are due to pressure upon these centers in the brain. The pupils are uneven-

ly dilated and the reaction to light is lost in the eye on the affected side. There is often diplopia or double vision, and convulsions, either localized or general, followed by paralysis, result. The patient becomes bed-fast and has a marked tendency toward sleeping, is listless and eats but little. Vomiting without nausea, indicating cerebral pressure, is persistent. Of the mental symptoms, the loss of memory is the first to appear, and is followed by irritability, loss of power of concentration, slowness of thought, and general mental and physical exhaustion, from which he dies.

MULTIPLE SCLEROSIS.

Definition.—This is also known as cerebro-spinal sclerosis, and is a chronic incoordination of the brain and spinal cord in which are various localized areas of degenerated nervous tissue, partly or completely replaced by connective tissue.

Adjustment.—Atlas or axis. Local subluxations may be factors in the etiology of this disease, therefore should also be considered.

Pathology.—The pathology of multiple sclerosis is the same as that of the spinal sclerosis previously described, except that in this disease there are multiple areas of degeneration, varying in size, and located in the white substance of the brain, and in both white and gray substance of the cord. The areas or patches consist of a hyperplasia of connective tissue, of nerves which press upon and produce atrophy of the nerve elements. This structural change in the brain and cord interferes with the function of the part thus affected, giving rise to motor, sensory and mental symptoms.

Symptoms.—The onset is very slow and gradual, the patient being unable to recall when the condition started. The first symptom to attract the attention of the patient is pains in the legs and back. At the same time, or soon after, it will be noticed that the individual is slow to think

and has a poor memory for recent events. The muscles of the hands become unsteady when writing, and the gait is of the pseudo-ataxic type when the patient attempts to hurry. The speech is slow and scanning. During conversation the patient will suddenly and unknowingly change the subject under discussion, and is unable to talk upon any subject intelligently for any length of time. The tongue may seem large for the mouth and seemingly protrudes, the knee jerk is increased, the muscles are stiff and spastic, and so weak that the patient falls frequently. There is a tremor that is noticeable early, and is increased upon excitement. It extends to the head, producing a sort of nodding spasm. The sexual function is lost, vision is poor, and there may be nystagmus, optic atrophy, or disturbances in hearing. The mental impairment is in proportion to the extent of the abnormality in the brain, and in many cases amounts to melancholia or other forms of insanity.

involuntary movement of the eyeball

SECTION X.

THE CONSTITUTIONAL DISEASES.

CHRONIC RHEUMATISM. K. P.

Rheumatism is an acute or chronic incoordination of nerves, muscles, articulations, membranes or bones, characterized subjectively by pain and objectively by local fever, redness, swelling, stiffness and sometimes deformity.

Adjustment.—The adjustment for all forms of rheumatism is K. P. in combination with local. For example, if the arm is affected the adjustment is A. P. and K. P., or the leg affected, the adjustment is K. P. and lower lumbar.

Pathology.—There is an inflammation or excessive heat in the nerve substance, the nerve sheath, or the tissues at the periphery of the impinged nerve. This is most frequently located in the joints, and is consequently called articular rheumatism. The affected joint becomes swollen and edematous. The synovial membrane becomes thickened and its secretions diminished. As a result of this thickening and diminished secretion the joint becomes stiff, the excessive heat bringing about stiffening of the cartilage and bone from which the deformity occurs. The joint may become ankylosed from the formation of false exostoses and remain permanently stiff.

Nerve Tracing.—There is always local tenderness emitting from the local subluxation and following the course of the impinged nerve to the part or parts affected.

Symptoms.—The cardinal symptom is pain, which is subject to marked exacerbations. It is more or less dull and aching continuously, but is severe and sharp at times. Usually several joints are affected, and are marked by swell-

ing, redness and tenderness. In order to minimize the pain, which is increased upon friction, the muscles become tonically contracted. There is some atrophy from non-use, the urine is highly acid and the skin has an acid odor.

MUSCULAR RHEUMATISM.

Definition.—A form of rheumatism in which the site of pain is located in the nerve endings of muscles or their point of attachment.

Adjustment.—K. P. in combination with local.

Symptoms.—The onset is sudden, with pain of increasing intensity upon muscular action. One or many muscles may be affected. When localized in the lumbar muscles it is called lumbago, when in the intercostal muscles is called pleurodynia, and in the hip, thigh or elsewhere is called myalgia. If the attack is acute there is fever of a moderate degree. The pain is intense, the patient being unable to move the affected muscles, or, perhaps, unable to roll over in bed. There is muscular contraction, which may be spasmodic or continuous. The urine is scanty and highly acid, the sweat has an acid odor, and the individual is usually constipated. When the intercostal muscles are affected respiration is greatly hindered. The acute attack lasts from one to two weeks and may finally become chronic. In the chronic form the pain is less intense, and may be intermittent.

DIABETES INSIPIDUS.

Definition.—An incoordination of the kidney, characterized by the passage of large quantities of pale urine, and excessive thirst.

Adjustment.—The specific adjustment in this incoordination is K. P. There is no pathological condition in the kidney, but because of abnormal expression of function the organ becomes unable to discriminate in the amount of elimination of fluid. The excess elimination of urine or

fluid drains the serum and suppresses the secretion from the various glands. The excessive thirst is therefore adaptative to increase the fluidity of the blood and serous circulation.

Symptoms.—The cardinal symptom is polyuria, large quantities of pale, slightly acid urine being voided. This amount varies greatly in different patients. It is not uncommon to pass two or three gallons in twenty-four hours. The urine is of low specific gravity, varying from 1.001 to 1.008, while normal specific gravity is 1.020. There may be aching pain in the lumbar region over the kidneys. The skin is dry and scaly, the mouth is dry, and there is great thirst and hunger. The bowels are constipated, the temper is irritable, memory is poor, the eyes are weak, and headache at the vertex of the skull is usually present. Chemical analysis shows the urine to be free from sugar, albumin, casts and other acids or substances found when pathological conditions exist.

Under the adjustments recovery is rapid, the amount decreasing from two or three gallons to the normal three pints, or thereabout.

It can be distinguished from diabetes mellitus by the absence of sugar and a low specific gravity; from chronic interstitial nephritis in the greater amount of urination, the absence of casts, albumin in small quantity, color of the skin and the characteristic urinary smell. Chiropractically, the prognosis in diabetes insipidus is always good.

DIABETES MELLITUS.

Definition.—A constitutional or metabolistic incoordination characterized by great augmentation in the quantity of urine and manifest alteration in its secretion, with thirst, hunger and emaciation.

Adjustment.—K. P. in combination with local subluxations, which might affect the organs of digestion, especially

the pancreas. In this incoordination the sugars cannot be assimilated, therefore when eaten, are thrown off, so as not to be a burden to the circulatory organs. The glycosuria therefore is adaptative.

Symptoms.—Most cases begin insidiously and run a chronic course, but often, when affecting children, the onset is sudden and the duration is short. In these cases of brief duration the patient becomes weak, emaciated, has great thirst and hunger, and polyuria. The symptoms increase in severity, death occurring from exhaustion in two weeks to a few months.

Most cases, however, when affecting adults, begin slowly, with an increased flow of urine, the patient noticing that it is necessary to arise one or more times during the night to urinate. At the same time it will be noticed that the thirst is greater and more water is being drunk. The amount of urine voided in twenty-four hours will vary greatly in different cases, from four to thirty pints. It is of a pale, clear color and has a sweetish taste and odor. The specific gravity is high, varying from 1.025 to 1.045. Chemical analysis shows the presence of sugar in quantities from one-tenth to ten per cent. The urine also contains acetone and diacetic acid. There is an odor of over-ripe fruit in the room occupied by a diabetic patient. The skin is dry and scaly and is intensely itchy. Thirst is persistent and the mouth is dry and parched. The breath has a sweetish odor, the tongue is red and fissured, the appetite is excessive and the bowels are costive from the draining of serum by excessive urination.

Flesh and strength are lost gradually and in proportion to the progress of the disease, sleep is poor, the eyes become weak, the temper is irritable, the sexual function is weakened and finally lost, the heart's action is weak, the pulse is irregular and of low tension, the power to concentrate is lost, headache at the crown of the head is common, and finally the kidneys become weak from overwork and are

unable to eliminate the metabolistic poisons, so they are retained within the body and break out as an eczema, with intense itching. The enumerated symptoms steadily increase in severity, with weakness and emaciation, until death results. Finally the kidneys fail to excrete, and dropsy results. During the late stages diabetic coma may occur, in which there is deep and profound sleep, but is only recognized by the accompanying symptoms of diabetes, and especially the urinary symptoms.

Although diabetes is considered an incurable disease from a medical standpoint, fully 90 per cent completely recover under Chiropractic adjustments. The time required to bring about complete restoration is very variable, depending upon the recuperative powers of the patient, his vitality, the degree of the subluxation, etc. Cases of twenty and twenty-five years standing have completely recovered after one month's adjustments.

GOUT. K. P K 4 Lumb

Definition.—A general constitutional incoordination, one characteristic factor being the deposition of sodium urate in and about the joint, and is accompanied by inflammation of the joint.

Adjustment.—Since this usually affects the meta-tarsophlangeal joint of the great toe, the local adjustment is at fourth lumbar, but K. P. should also be adjusted so as to increase the normality of the kidneys, that they may be enabled to excrete the excess of urates, thus preventing their deposition in the articulations.

Pathology.—There is a localized inflammation of the small joints, and especially the great toe, with redness from the hyperemia and swelling from the edema. The prolonged excessive heat causes crystalization of the calcareous material which becomes deposited in the inflamed tissues. This deposit of sodium urate deforms the joint, and in appearance it simulates an exostosis. Finally the skin may ulcerate,

and the chalky deposit will perforate through. Deposits are also found on the tendons, cartilage and skin.

Symptoms.—The acute form begins suddenly during the night, with an intense pain in the great toe, a chill, fever of 102 degrees or less, and extreme restlessness and insomnia. The toe is greatly swollen, very red, tender, and the surrounding skin is glossy, tense and shiny. The pain diminishes upon constant motion, and may entirely disappear after two or three hours, to return the following night. The attacks may occur with regularity each night for five to ten days, after which there may be a long interval of rest. Individuals who have experienced previous attacks usually have prodromal symptoms, indicating the oncoming of an attack. These consist of drowsiness, constipation, palpitation of the heart, irritability of temper, scanty, high-colored urine, and aching pains in the lower extremities.

Chronic gout results from the many recurrences of acute attacks. The inflammation becomes chronic and causes a crystalization of sodium urate which is deposited in and around the joint, producing disability and deformity. Many joints may finally become involved, spreading from the great toe to the rest of the phalanges of the foot, the ankle, knee, and upper extremities. The deposits of this trophi deforms and produces ankylosis of the joints involved. Later in the incoordination there are deposits of the trophi in the cartilage of the ear, sternum, ribs, larynx, in the tendons of the muscles, and in the skin. Portions of the deposit may be exposed because of ulceration of the skin covering them. The blood vessels become hard and inelastic, making the blood pressure high, thus increasing the peripheral resistance and inducing hypertrophy of the left ventricle. In addition to the above named symptoms there may be gastric and intestinal symptoms of a severe type; vascular symptoms pertaining to the heart and blood vessels, and renal symptoms, indicating disturbances in the function of the kidneys. Gout can be distinguished from articular rheumatism in that the latter affects the larger joints, is not attended by

the severe pain of gout, does not have the excessive hyperemia and venous congestion of gout, and usually has a fever that is more severe than that of gout. In rheumatism the attack is not so intermittent, and there is no deposit of tophi in the cartilage, tendons and skin.

Arthritis deformans affects the small joints as does gout, but the attack is gradual and the pain is present continuously, not being intermittent during the day, as is the case in the onset of gout. The deformity in arthritis deformans consists in a softening of the bone and formation of false exostosis, and not in the deposit of sodium urate.

ARTHRITIS DEFORMANS.

Definition.—A chronic incoordination of the joints, characterized by changes in the cartilage and synovial membranes, with periarticular formation of bone and great deformity.

Etiology.—This is caused by local subluxations impinging the nerves having to do with the expression of the calorific function, thereby causing abnormal expression of this function, as is expressed in the production of an inflammatory deformity. In cases where the arthritis is limited to the vertebrae the cause is a subluxation of the atlas or axis. K. P. should be included in the adjustment in all such cases.

Pathology.—During the early stages the synovial membrane is hyperemic and swollen, the synovial secretion is increased, making the entire joint appear edematous, and the motion of the joint is diminished, because of the pain produced upon motion. The continued inflammation or excessive heat produces a proliferation of the connective tissue corpuscles with resulting thickening of the membrane and suppressed secretion of the fluid from sclerosis of the secreting cells. This hypertrophy of the synovial membrane tends to stiffen the articulation. The periarticular cartilage is disintegrated and disappears, so that the ends of the bones

are exposed and raw. The ligaments and surrounding structures become greatly thickened, and bony nodules form from the raw ends of the bones, effecting ankylosis of the joints. The nodules give to the extremity affected a peculiar and characteristic deformity.

Nerve Tracing.—Tenderness is traceable from the local subluxation along the course of the impinged nerve to the parts affected, often becoming diffuse around the affected joint.

Symptoms.—There is an acute and a chronic form. The acute form begins with pain in the small joints, simulating acute rheumatism. The pain is intense and constant, but the swelling and hyperemia is slight. Many joints are affected at the same time, possibly involving both upper and lower extremities. This always affects the small joints, but with time may also involve the larger ones.

The chronic form is more common and is always symmetrical, involving both lower extremities or both upper extremities, or possibly all four extremities. The peripheral joints become swollen and slightly red, and this condition is attended with a moderate degree of pain which is subject to exacerbations at times. Small bony growths form upon the ends of the bones as a result of epiphyseal proliferation, and finally effect ankylosis of the joint involved. The adjacent muscles are tensed and undergo slight atrophy. The hands are deflected and many of the fingers may be partially flexed. The skin is smooth and glossy, and the wrist is broad and flat. It is not uncommon to find small petechial spots, or arthritic purpura, beneath the skin. Finally larger joints may become involved, with similar deformities and stiffness.

The monarticular form is so named because it affects only one joint, and is more commonly found in elderly people. The pathological changes are the same as those described. The joint is finally ankylosed and made perma-

nently stiff. The hip, shoulder, and knee joints are most frequently involved.

Heberden's Nodositis is a peculiar nodular deformity, affecting the distal phalanges, in which there is a bony growth formed upon the dorsal aspect of the joint, preventing it from being extended. This bony nodule can be palpated, is usually red, swollen, and slightly tender.

RICKETS. Lack of Vitamin "D."

Definition.—Rickets, which is also known as rachitis, is an incoordination beginning in early life, characterized by impaired nutrition of the entire body, abnormality of the long bones and various incoordinate muscular movements. Also called Barlow's disease.

Adjustment.—Atlas or axis, S. P., and may include C. P. and K. P.

Pathology.—The first noticeable changes occur in the bones. The long bones have an over-abundance of organic matter and a deficiency of inorganic matter; this makes them soft, and when weight is placed upon the legs, causes a bending of the bones in the leg and thigh. The ends of the bones become soft and spongy, and nodules form upon them from the epiphyseal proliferation. A series of bony nodules form upon the sternal end of the ribs, and on the costal cartilages, which is commonly known as the rachitic rosary. Spontaneous fractures are common, especially at the junction of the epiphysis and shaft of the femur and the upper end of the tibia. The bones of the skull may become abnormally thin in places, from absorption of the mineral matter, leaving spots that can be indented upon slight pressure. This is known as cranio-tabes.

Symptoms.—This most frequently occurs in males, and appears early, and may be accounted for by the fact that the male head is much larger than the head of the female, therefore may be the cause of a more difficult childbirth,

which would increase the possibility of producing an atlas subluxation at that time sufficient to cause the incoordination.

The symptoms manifest themselves during the first year of life, and begin with restlessness, irritability, slight fever. The child cries a great deal, wakes frequently during the night, and has drenching sweats, especially around the head. There is a general hyperaesthesia over the entire body, which would further indicate a cord pressure at the atlas. The child fails to eat as formerly, therefore becomes thin and amaciated; the skin is pale, the fontanels fail to ossify and are depressed, and the sutures of the cranial bones are deep and furrowed. Dentition is delayed, and the teeth that do appear are small and irregular in shape. The child becomes anemic, and though he may eat well, the food is not assimilated. The abdomen protrudes, making the child pot-bellied, the face is thin and narrow, and the head appears to be greatly enlarged, but this is due to the abnormal shape, caput quadratum, resulting from the formation of bony plates, being found upon the frontal and parietal eminences. The hair on the back of the head is worn off by the constant turning of the head from side to side, and the back of the skull becomes the site of craniotabes. The ribs become very near the horizontal because of the bulging anteriorly of the chest, while the lower costal cartilages appear to be pressed backward. The legs and arms become deformed because of the softening. Talipes may occur in the feet, while the muscles are thin and long, of a doughy character, and the skin is moist and clammy. The nutrition of the entire body suffers, and every bone may be deformed because of this fact.

The child grows, but not at the normal rate of speed, and his body is not well proportioned. The muscles are usually stiff, and the hands and arms may be in constant involuntary motion. Walking is very difficult, and in many cases it is impossible for the patient to retain his equilibrium.

Fig. 10.—*Skeleton of a severe case of rickets.*

Lack of Vitamin "D"

OBESITY.

Definition.—An incoordination of the metabolism in which there is an excessive accumulation of fat evenly distributed over the entire body.

Adjustment.—The principal adjustment is at K. P., but the atlas should be carefully examined, and if subluxated should be adjusted. Local adjustments may be made which would affect the digestive tract, and these would be determined by a careful analysis of the case.

Symptoms.—Obesity has been called "oil dropsy" or general fatty infiltration. As a rule fat is no sign of health, and especially so in children, yet some people who are very stout enjoy the best of health. Obesity is not always associated with over-eating, for many corpulent people are very small eaters, and it is not uncommon to find very hearty eaters who are thin. It is not how much we eat nor what we eat, but how what we eat is assimilated that makes us corpulent. This is controlled by the manner in which the primary functions are permitted to be expressed in the tissues of the body, and so long as there is no hindrance to the transmission of impulses from the brain to all tissues this function is carried on normally, but should there be vertebral subluxations interfering with the flow of vital force, the metabolism will become abnormal, and the result may be obesity.

Many cases experience no great discomfort, while others have difficult breathing, irritability of the heart, pendulous abdomen, and in order to maintain the equilibrium assume a posture that produces an adaptative lordosis of the lumbar region. Other cases develop during the early life or about the age of puberty. The child is large for his age, the muscles become soft and flabby, the bowels sluggish, the skin cool and moist, the heart enlarged and displaced, the pulse strong and slow, the respirations rapid upon very slight exertion, and there is a great indisposition to exercise. There is abdominal discomfort and thoracic oppression, and

in sleeping the patient may require a position in which the head is greatly elevated in order to make respiration more comfortable. As a rule life is not shortened unless the heart is involved, and if the heart is crowded, made to work harder under difficulties by the abnormal deposition of fat, it will hypertrophy and later dilate, when compensation is lost. This may be fatal.

ADIPOSIS DOLOROSO.

Definition.—A metabolistic disturbance characterized by irregular deposits of fat in various parts of the body, preceded by or attended with severe burning pain.

Adjustment.—Atlas, K. P., and possibly local for the digestive tract, as will be determined by spinal analysis.

Symptoms.—This is a very rare incoordination, and most frequently occurs in fat individuals. The patient gradually increases in size, and fatty tumors form over the entire body. These tumors are located deeply in the abdominal and thoracic cavities, and superficially in the subcutaneous areolar tissue. They may vary in size from that of a pea to large tumors four or five inches in diameter. The fatty tumors do not appear upon the palms of the hands nor upon the soles of the feet, and but very rarely form upon the face. Each tumor is attended with a severe burning pain which is so severe that it keeps the patient awake, and serves as a differential symptom from multiple lipoma. Tenderness is also present to a marked degree, and is absent in lipoma.

SECTION XI.

THE INTOXICATIONS.

ALCOHOLISM.

Definition.—An incoordination resulting from the introduction of alcohol into the human economy, characterized by muscular incoordination, mental disturbance, and finally narcosis.

Adjustment.—When an individual is in a state of narcosis or under the influence of alcohol to any extent, the adjustment should be for the purpose of increasing the rapidity of the elimination of the narcotic from the body. This would be effected by adjusting K. P., but the adjustment for alcoholism would include more than this, for there is an abnormal desire for that which is not food; that is, the appetite is perverted, and this would be rectified by an S. P. adjustment. In addition to this, it is known by many that alcohol is detrimental to the body and tends to shorten life, yet because of a weak will they are unable to resist taking the poison when the perverted appetite craves for it. This weakness of the will power is caused by an atlas subluxation, hence the complete adjustment in cases of alcoholism is atlas, S. P. and K. P.

Symptoms.—Acute alcoholism is the result of the sudden introduction of a large quantity of alcohol into the human body, which is capable of producing a state of narcosis. The onset of the narcosis is gradual after the drinking of the liquor, and is characterized by mental disturbances such as incoherent speech, hyperactivity of the mind, the performance of rash acts, impaired judgment, sleepiness, and finally the patient passes into a stupor, or alcoholic coma. The coma is characterized by a flushed face, which may be slight-

ly cyanosed, a steady, slow, and heavy pulse, slow, deep respirations and dilated pupils. The surface temperature is slightly below normal, and the odor of alcohol is marked upon the breath. By firm pressure upon the supraorbital notch, pinching the nose or dashing cold water on the face, the patient may be aroused, and always resents being awakened by blows or incoherent speech. It is necessary to distinguish this state of unconsciousness from apoplectic coma. Apoplectic coma occurs more suddenly, the pupils are unevenly dilated, there may be conjugate deviation of the eyes, the head may be turned to one side, and there are evidences of a hemiplegia which can be determined by examination of the muscles of the extremities and face.

Chronic alcoholism is the result of the long-continued use of liquor. There is a marked unsteadiness of the muscles, especially those of the hand, as can be noticed in writing. There is slowness of thought, the memory is poor, the judgment is impaired, the temper is irritable, and there is a peculiar and offensive odor to the breath. The eyes and nose are red from sclerosis and dilatation of the cutaneous capillaries, there is an abnormal thirst, the bowels are constipated, and the digestion is poor, because of the destructive effect of the alcohol upon the delicate mucous membrane lining the digestive organs.

The poisonous effects of alcohol are manifested in three ways: (1) Its narcotic effect or its action as a functional poison. This is best seen in the acute form, when the nervous mechanism is unable to coordinate because of the effect of the poison. (2) As a tissue poison, such as is seen in epithelial and nervous tissue, where it produces a slow degeneration or hardening. (3) As a checker of tissue oxidation; that is, the alcohol is oxidized or consumed, in place of the fats and food properties. Many of the cases of acute alcoholism are the result of dipsomania, or a periodical craving for the beverage.

DELIRIUM TREMENS. Atlas & K. P.

Definition.—A state of mental agitation, characterized by restlessness, incoherence of speech, delusions and sensory perversions, resulting from the long-continued and over-use of alcohol.

Adjustment.—Atlas and K. P. The K. P. adjustment is for the purpose of increasing the rapidity of the elimination of the alcohol from the body, and the atlas adjustment is for the purpose of increasing the flow of mental impulses to the lobes of the brain in which are located the functions of consciousness, giving to these lobes added resistance, so that the poison may not have such a marked effect.

Symptoms.—This may follow an attack of alcoholic narcosis in a subject of chronic alcoholism. The onset is sudden, with insomnia and extreme restlessness. There may be mental depression, and a tendency to extreme talkativeness. The bodily temperature may be elevated to 101 or 103 degrees, with gastric and intestinal disturbances. The principal symptoms are those pertaining to the mind. The imagination is disordered by delusions, illusions and hallucinations. A delusion is an absurd and unfounded belief. An illusion is a false interpretation of objects that do exist. An hallucination is a sense perception without a physical basis. Among the more common imaginary disturbances is the fear of being pursued by wild animals or reptiles. The patient becomes terror stricken at the pictures on the wall paper and other objects in the room, which he imagines are reptiles or wild animals which will do him injury. The delirium and terror of this condition may be so great that restraint must be used in order to prevent the patient from doing bodily harm to himself. During the entire time of the delirium and hyperactivity of the mind the patient is unable to sleep, which makes him weak and prostrated. If rest cannot be obtained the patient may die of prostration, but if he can fall into a quiet sleep, during which time recuperation occurs, he will awaken much revived, and as elimina-

tion takes place, will again become normal. The adjustment of the atlas and K. P. will so increase the rapidity of elimination and increase the resistance of the brain that the return of consciousness will occur with great rapidity.

MORPHINE HABIT.

This habit is usually incurred when the drug is used for medicinal purposes, especially for the relief of pain. When the drug is given in a sufficient quantity it produces a feeling of satisfaction which lasts until it has been eliminated from the body. As soon as the effect has worn off there is a feeling of distress in the epigastric region. This feeling is spoken of by the patient as a pain, but is not a pain, rather it is a paraesthesia or a sensory disturbance which the patient uses as an excuse to obtain the drug.

Adjustment.—By adjusting the atlas, S. P., and K. P., and using the will power to such an extent that the dose can be reduced each time, the habit can be entirely overcome, even in the most severe cases.

Symptoms.—At the beginning the symptoms are slight and hard to describe, the patient's general health being slightly impaired. It may require but a short time for the patient to acquire the habit, and after it is once acquired the patient cannot resist the desire for the drug. If in the attempt to overcome the habit the patient should voluntarily do without it for a time, there will be the feeling of discomfort, nausea, mental depression, and possibly vomiting. The longer the drug is used the larger must be the dose. That is, the body is constantly aiming to resist the injurious effects, and through the adaptation which accomplishes this, the elimination is increased so that it is necessary to take a larger dose in order to have the same effect. As the doses are made larger the effect upon the body is more marked. and the general health is affected to a greater extent. Among the most common disturbances are a loss of appetite and sleep, restlessness, indigestion, mental depression, and weak

ness of intellect, so that the patient is unable to concentrate, to hold to his opinions, and often he becomes untruthful. The pupils become minutely contracted when the patient is under the direct influence of the drug, and are dilated when the reaction occurs. There is a gradual and continuous weakening of the mind and body so that the eyes have a peculiar gazing look, the face becomes sallow and the skin is pale, the muscles are thin and weak, and the individual becomes prematurely aged, often dying from extreme weakness.

ACUTE OPIUM POISONING.

Definition.—A state of narcosis resulting from the taking of a large quantity of opium into the human economy.

Adjustment.—The adjustment should be such that the elimination of the drug will be effected as soon as possible, and this would be given at S. P., and K. P. If the stomach is normal vomiting may take place at once, in which event the narcosis would not occur. If vomiting does not occur, and the dose is taken into the stomach, it will soon be absorbed and carried throughout the body. It would be the K. P. adjustment that would be of importance then. Atlas or axis might also be adjusted so as to increase the resistance of the brain, and help to restore consciousness.

Symptoms.—It may be several minutes, or possibly half an hour, after the dose has been taken before the effect becomes noticeable through the symptoms. The height of the coma is reached soon after the onset of the symptoms. The coma is very profound and is characterized by a pale face, though at times it is cyanosed on account of the infrequency of respirations. The pupils are contracted to pin points, the respirations are decreased to from 12 to 4 per minute, the cornea is insensitive to light and to touch, and there is no resistance when an attempt is made to open the eyelids. The heart is weak and the pulse is feeble. At the beginning of the coma the muscles may be in a state of contraction, but they soon relax, and become flaccid. There is retention of

the urine, resulting from the anaesthesia of the bladder, which may last for several hours, and if prolonged may give rise to symptoms of uremia. If the dose is large enough the patient will die, and it would be possible to take an amount so great that the adjustment would be unable to give relief. But in the smaller doses an immediate adjustment will be of great service in eliminating the drug, and preventing its narcotic effects.

LEAD POISONING.

Definition.—A condition resulting from the absorption or ingestion of lead into the human system in sufficient quantity to overcome the normal bodily resistance.

Adjustment.—K. P. and local. The local depends upon the location at which the lead accumulates. In cases where the lead enters the body through the digestive tract, S. P., and upper lumbar should also be included in the adjustment.

Symptoms.—In Dr. Palmer's works he states there are five cardinal points in the study of poisons, which are as follows:

(*a*) "That which is normally made by one animal and transferred to man or another animal become a poison to the second animal, because it is not a normal secretion of the second animal."

(*b*) "That which is made artificially by man and transferred to man or another animal, with the intent of duplicating its normal secretion, is a poison, because it is constituted of elements which are abnormal to man or that animal."

(*c*) "That which is normally made or secreted but transferred to the wrong place is a poison to the organs for which it was not meant, such as the bile getting into the stomach through the pyloric valve when it properly belongs in the intestine."

(*d*) "That which is secreted but not excreted, and which gathers in excessive quantity, being dammed back by some obstruction, and is absorbed and carried throughout the body, is a poison. This is well seen in case of diffuse nephritis, where there is suppression of urine, the supressed urine being carried over the entire body and infiltrated into its tissues."

(*e*) " That which is introduced into the human body which does not belong there is a poison. Lead poisoning, as well as opium and morphine poisoning, and alcoholism are types of this form."

Acute Lead Poisoning.—This may be acquired from the drinking of water, wine or milk that has been contained in lead-lined vessels or pipes for any length of time, or in painters who come in contact with white lead, where it is breathed and absorbed through the skin, or it may occur in children who play with toys composed of lead.

The onset is usually sudden, and begins with a severe gastralgic pain situated near the center of the umbilical region and radiating outward from this point in all directions. This pain may closely resemble that of gastralgia or enteralgia. There is vomiting of a very persistent character, and also diarrhoea, the abdomen is tender and often distended, and occasionally there may be convulsions. The pain is paroxysmal, and is commonly spoken of as lead colic, and may be relieved by firm pressure upon the abdomen with the palm of the hand. The pain is supposed to result from the pressure upon the nerve endings in the stomach or intestines by the lead which has become deposited in the walls of these organs.

The chronic form results from the slow absorption of small quantities at a time, the process going on for a long period of time.

The symptoms of chronic lead poisoning may be classified into five groups, as follows:

1. Disturbances of nutrition, with a blue line on the gums.
2. Lead colic.
3. Arthralgia or pain in the joints.
4. Palsies or paralysis.
5. Encephalopathy.

The symptoms of the chronic form gradually occur and increase, affecting different portions of the body, according to the point at which the lead is deposited and the quantity of lead absorbed or ingested. If the body was in a normal state the lead would not accumulate, but would be eliminated from the body as soon as it was absorbed. The accumulation is due to local subluxations which weaken the part and decrease its cellular activity. Among the nutritional disturbances which are often the first to appear in the chronic form is the pallor of the skin, which indicates a deficiency of red cells or haemoglobin in the red cells. The patient becomes emaciated, and his muscles become thin and flaccid. Along the border of the gums there is a dark blue line which cannot be removed by rubbing, as the line is in the tissue of the gums, and not deposited upon the exterior.

The mouth is constantly dry and has a metallic taste, the tongue is coated, and the breath has a fetid odor. There is usually gastric and intestinal disturbances, and there may be attacks of lead colic during the early stages. The colic is severe, as in the acute form, and is frequently accompanied by diarrhoea and vomiting.

The arthralgia occurs when there is a deposit of lead in the structures around the articulation. The joint swells, becomes red and the motion is hindered. Deformities may occur, as there is inflammation, which causes a softening of the bone and formation of false exostosis.

Paralysis occurs with the greatest degree of frequency in those cases in which there is arthralgia. The lead is believed to become deposited in the sheath of the nerve and

in the nerve endings, affecting the nerve so that the muscle fails to receive its proper amount of impulses or vital force, hence the development of paralysis. The muscles undergo atrophy and are flaccid. De R. becomes apparent, and because of the stretching of the ligaments a partial or complete dislocation may occur. The skin is cool and dry, the extremity is tender upon palpation, and there may be a slight tremor in some cases. The paralysis may affect any or all of the muscles of a part.

Encephalopathy results when the lead reaches and is deposited in the brain so that it effects a poisoning of certain brain centers, thus giving rise to certain groups of symptoms. It occurs in but a very few cases of lead poisoning. Predisposing this encephalopathy there is the existence of an atlas subluxation which weakens the brain and permits the effect of the deposit of the metal. The patient may have delirium, coma, or may pass into convulsions. The delirium may be either mild and muttering, or wild, and the patient may act maniacal. In most cases it is paroxysmal, with intervals of rest and sleep. Often after a prolonged sleep recovery may take place. The coma is sudden and may occur without any attending symptoms. Convulsions are one of the most common symptoms of this form of lead poisoning, and occur when a quantity of lead is deposited in the motor area of the brain, or deposited elsewhere at a point where it is capable of producing pressure upon this area. The meninges covering this motor area are frequently sites, and the convulsions produced are similar to epilepsy. The convulsions are associated with mental dullness, and are followed by the coma as described previously.

ARSENIC POISONING.

Definition.—A form of poisoning resulting from the entrance of arsenic into the human body.

Adjustment.—Atlas, local and K. P.

Symptoms.—The same explanation as given in alcoholism and morphine habit will hold here. Arsenic poisoning frequently occurs from an over-dose given for medicinal purposes, but since it is the active principal in paris green, and is used in the making of wall paper, it may enter the body through the respiratory tract or be absorbed through the skin. Arsenic, unlike many other poisons, will accumulate in the body, but does not scatter. Therefore, it may require a long period of time for sufficient arsenic to accumulate to produce any symptoms.

The acute form begins suddenly in cases where the drug has been used for medicinal purposes, and is characterized by intense epigastric and abdominal pain, severe vomiting, diarrhoea of bloody and offensive stools, retraction of the abdominal muscles, tenesmus, dryness of the mouth with a metallic taste, and possibly salivation at times. If the quantity of arsenic is large the patient may become comatose, the coma resembling that of opium poisoning.

The chronic form begins with anemia and weakness; the body becomes emaciated, the gums become spongy and bleed easily, there is numbness and tingling in the extremities, and marked pain simulating that of neuritis. As the condition progresses the pain subsides, and paralysis becomes more marked. The paralysis affects the extensors of the foot and wrist, which permits foot drop and wrist drop, the affected muscles are flaccid and are greatly atrophied. The steppage gait is present. It is distinguished from infantile paralysis and multiple neuritis by the history of the use of arsenic, or by a history of the occupation of the patient.

illus Botulinus

FOOD POISONING.

Poison is a name given to all substances which when introduced into the animal economy act in a noxious manner on all the vital properties or textures of an organ, or upon the system at large. The body is constantly aiming to rid itself of such substances by a process of elimination, and

adapt itself to the transient passage of the substance through the body. That is, if a poison is taken into the stomach which is obnoxious to that organ, *Innate,* if unhindered by subluxation, directs the stomach at once to throw it up or to form such secretion as will neutralize its effect upon the tissues with which it must come in contact before proper elimination. This being done, the stomach acts in accordance with its bidding, and the poison is thrown from the body, having little or no effect upon it, owing to the short time of its presence. Should there be a subluxation at S. P. hindering the transmission of impulses and impressions to and from the stomach, it would fail to receive the proper information until the poison was given liberty to act; hence the symptoms, which are the manifestations of the action of the poison upon the bodily tissues.

Ptomaine poisoning is one of the most common forms of food poisoning. The ptomaines are nitrogenous basic substances forming in animal or vegetable matter upon the seventh day of putrefaction, and are commonly met with in canned meats, vegetables, fish and dairy products.

Adjustment.—S. P. and K. P. in all cases, and many cases should be adjusted locally for additional or associated symptoms or conditions.

Symptoms.—The symptoms of ptomaine poisoning are more variable than those of any other disease or condition known. Several people who have eaten of the same food will all present different symptoms. Some may suffer no ill effects at all, others may have a dull headache without additional symptoms, still others may have a pain in the epigastric region with nausea and vomiting, others attacks of diarrhoea or diarrhoea with gastric disturbances, while still other cases may have slight fever, general discomfort, anorexia, vertigo, syncope, cold sweat, abdominal pain, diarrhoea and constant vomiting, with or without convulsions and cerebral symptoms. However, the great majority of cases have gastro-intestinal symptoms. Often there is numb-

ness, tingling, stiffness of the joints, muscular contractions, prostration, and finally collapse.

The great variety of symptoms is due to the different degrees of pressure upon the nerves, which cause a variation in the extent to which Innate can carry out her adaptation. The less is the pressure upon the nerves the greater will be the adaptation, and the more moderate will be the symptoms, while if there be a severe pressure but few impulses and impressions will be permitted to pass, and the adaptation will consequently be slight, hence the great severity of the symptoms.

SUNSTROKE.

Definition.—This is also known as insolation and thermic fever, and is an abnormal condition resulting from the effects of the direct rays of the sun upon the body. Heat exhaustion is an abnormal condition resulting from exposure to excessive heat, either natural or artificial. The former presents the symptoms of coma, while the latter is characterized by collapse.

Adjustment.—The amount of heat a person can withstand depends upon the degree to which Innate can adapt the body to this heat. That is, those individuals, in which the dissipation of heat is great or in which the thermotaxic mechanism is normal, are practically free from being overcome by heat. The radiation and elimination of heat from the body is mainly through the skin, and the condition of the skin is largely governed by the kidneys, hence a K. P. subluxation might alone be capable of producing a condition in which the perspiration was stopped, thus decreasing heat dissipation and lessening the adaptability of the body to heat. A cord pressure at the atlas or axis might cause a similar condition. Atlas and K. P. is specific in sunstroke or heat exhaustion.

Symptoms.—Sunstroke begins suddenly, with coma, the face is hot and flushed, the skin is excessively hot, the tem-

perature often being 108 degrees, the pulse is strong, steady and bounding, the respirations are deep and labored, the cornea is insensitive, and the muscles may be in a state of tonic spasm. The circumstances attending the condition often are of importance in the analysis; that is, a patient found in a field or otherwise exposed to the direct rays of the sun during an unusually hot day, and having the aforenamed symptoms, usually has sunstroke. Some cases may die immediately or soon after the coma appears, and in such cases the temperature suddenly drops and the symptoms of collapse appear. Many cases that do recover without receiving adjustments are unable to withstand hot weather, or even moderately hot weather, thereafter. The adjustment at atlas and K. P. will enable the excretory apparatus to accomplish its function, thus increasing heat dissipation and preventing the destruction of vital organs by excessive heat.

Heat exhaustion may occur within a building, in a foundry, or anywhere that the temperature is exceedingly high. The onset is more gradual than that of sunstroke, and begins with dizziness, a feeling of fullness or pain in the head, nausea and vomiting, and a sensation of chilliness or hot flashes along the spine. There is great weakness and a sensation of suffocation. The face is pale and may be bathed in cold perspiration, the temperature may be subnormal, or there may be a slight fever, the pulse is rapid and feeble, the respirations are shallow and quick, the cornea is sensitive, and the pupils may be slightly dilated. Unconsciousness is very rarely met with in heat exhaustion. The adjustment of the atlas and K. P. will increase elimination of poisons and fluid which carry with them surplus heat, thus increasing heat dissipation and lowering the bodily temperature.

INDEX

Page

A

Abdominal typhus ... 86
Abscess of tonsil ... 161
Acetone test ... 83
Acne—Syphilitic ... 148
Acromegaly ... 344
Addison's disease ... 307
Adenitis—Syphilitic ... 148
Adenoids ... 163
Adiposis doloroso ... 396
Adjustment—Effect on fever ... 86
Afferent nerves ... 10
Ague cake ... 120
Albumin—Test for ... 79
Alcoholism—Acute ... 397
Chronic ... 398
Alcoholic coma ... 36
Alopecia—Syphilitic ... 148
American disease ... 334
Amyloid kidney ... 321
Amytrophic lateral sclerosis ... 359
Analysis ... 25
Anarthria ... 65
Anasarca ... 45
Anemia—Primary ... 298
Progressive pernicious ... 300
Secondary ... 298
Splenic ... 310
Aneurism—Abdominal ... 297
Arterio-venous ... 296
Cylindrical ... 296
Dissecting ... 296
False ... 296
Saccular ... 296
Thoracic ... 297
True ... 296
Angina pectoris ... 293
Angiosclerosis ... 294

Page

Anidrosis ... 43
Ankylosis ... 71
Anorexia ... 50
Anosmia ... 64
Anthracosis ... 257
Anthrax ... 141
Anuria ... 57
Aortic—Incompetency ... 73, 276
Insufficiency ... 73
Stenosis ... 72, 278
Aphasia—Auditory ... 66
Motor ... 66
Sensory ... 66
Visual ... 66
Aphonia ... 65
Apoplectic coma ... 37
Apoplexy—Cerebellar ... 374
Cerebral ... 374
Intercranial ... 374
Pial ... 375
Pons ... 375
Appendicitis—Chronic ... 198
Gangrenous ... 196
Interstitial ... 196
Parietal ... 196
Recurrent ... 198
Apraxia ... 66
Argyll-Robertson pupil ... 61
Arrythmia ... 293
Arsenic poisoning ... 405
Arteries—Diseases of ... 294
Arterio-capillary fibrosis ... 294
Arterio-sclerosis ... 294
Arthritic diathesis ... 27
Arthritis deformans ... 391
Multiple ... 47
Monarticular ... 47
Ascites ... 233

Page

Asthma—Bronchial 248
Thymic 242
Ataxic gait 29
Atelectasis—Pulmonary 258
Atrophy—Progressive muscular....356
Autumnal fever 86

B

Bacillus—Of Eberth 90
Typhosis 90
Banti's disease 310
Basedow's disease 312
Barlow's disease 393
Benedict's test 83
Bile ducts—Acute catarrh of....203
Chronic catarrh of....205
Suppurative inflammation of....206
Bile pigment test 80
Bile salt test 80
Biliousness 52
Bloody flux 115, 117
Blood—Diseases of 298
Boils 45
Bradycardia 76, 292
Brain—Abscess of 379
Acute softening of....377
Dropsy of 380
Embolism of 377
Thrombosis of 377
Tumor of 382
Water on 380
Breakbone fever 93
Bright's disease—Acute 319
Chronic 319
Bronchi—Diseases of 243
Bronchial asthma 248
Obstruction 248
Bronchiectasis 245
Distinguished from tuberculosis 246
Bronchitis—Acute 243
Capillary 254
Chronic 244
Fibrinous 247

Page

Membranous 247
Plastic 247
Broncho-pneumonia 254
Bronzed skin disease....307
Buboes 119
Bubonic plague 119
Bulimia 50

C

Cachexia 27
Cancerous 27
Malarial 121
Syphilitic 27
Calculi—Pancreatic 226
Renal 324
Calorific function 13
Camp fever 91
Cancer—Of intestine....200
Of liver 220
Of stomach 173
Carbuncles 119
Carcinoma—Distinguished from sarcoma 173
Distinguished from gastritis....175
Of gall bladder 209
Of intestine 200
Of liver 220
Of pancreas....224
Of peritoneum....232
Of stomach 173
Cardiac cycle 72
Dropsy 46
Neuroses 291
Carditis—Simple 289
Suppurative 289
Cartilage—Aortic 74
Case histories 25
Catarrh—Acute of bile ducts....203
Acute gastric 167
Acute nasal 236
Chronic of bile ducts....205
Chronic gastric 169
Chronic nasal 237
Suffocative 254

Page

Catarrhal fever 96
Cerebellar ataxic gait 30
Cerebro-spinal meningitis 95
Cervical glands—Enlargement of....138
In tuberculosis 138
In frebicula 140
Chalicosis 257
Chancre—Hard 146
Chest—Emphysematous 260
Phthisical 134
Chicken pox.....102
Child crowing 242
Chiropractic analysis 25
Clorides 79
Test for..... 81
Chloro-anemia 299
Chlorosis 299
Cholecystitis—Acute 212
Cholelithiasis 209
Cholera Asiatica.....117
Infantum 186
Cholerine 118
Chorea 336
Maniacal 337
Cirrhosis—Of liver .....
Atrophic 216
Hypertrophic 217
Clergyman's sore throat 159
Coccyodinia 345
Coffee-ground vomit 52, 175
Coldness—Sensation of 33
Of skin 43
Cold sores 64
Colic—Mucous 193
Colitis 184
Collapse 59
Colon—Dilatation of.....190
Coma 35, 36, 57
Coma vigil 35
Common bile duct—Obstruction of....208
Compensation 74
Congestion 14
Active of lungs 250
Passive of lungs 250

Page

Hypostatic 250
Mechanical 250
Consciousness 35
Constipation 53, 190
Convulsions 38
Coryza 236
Costiveness 53, 190
Cough—Brassy 67
Bronchial 68
Croupy 68
Dry 67
Laryngeal 67-68
Loose 67
Lung 67-68
Metallic 68
Suppressed 68
Cramps 32
Cretenism 314
Head of 60
Croup—Catarrhal 240
False 240
Spasmodic 240
Crisis 49
Cyanosis 40
Cyst—Arthritic 47
Pancreatic 225

D

Debility 34
Delirium 35
Delirium tremens 399
Delusion 36
Dengue 93
Differentiated from acute rheumatism 94
Differentiated from yellow fever 94
Dermamere 22
Diabetes insipidus 386
Diabetes mellitus 387
Diabetes sugar 387
Diabetic coma 38
Diacetic acid test 83

Page

Diagnosis 13, 25
By exclusion 25
Differential 25
Diarrhoea 54, 191
Acute dyspeptic 185
Diathesis 26
Dicrotic pulse 88, 130
Difficult urination 56
Digestive system—Diseases of....151
Digestive tract—Symptoms of.... 50
Dilatation—Atonic 176
Of Colon 190
Of heart 287
Obstructive 176
Of stomach 176
Diphtheria 108
Laryngeal 109
Nasal 110
Paralysis of 110
Pharyngeal 108
Pseudo membrane of....108
Diplopia 62
Direct diagnosis 25
Diseases of the respiratory system....236
Disuria 55
Dizziness 35
Dorsal—Inert posture 28
Strong posture 27
Dropsy 45
Of brain 60
Of gall bladder 212
Duodenitis 184
Dysentery 115
Acute specific 116
Amoebic 116
Catarrhal form 115
Chronic form 117
Diphtheric form....117
Dyspepsia—Acute 167
Chronic 169
Nervous 181
Dysphonia 65
Dyspnoea 57
Expiratory 248

Page

E

Ecchymosis 44
Edema 45, 46
Pulmonary 251
Efferent nerves 10
Embolism—Of brain 377
Of lungs 253
Embryonic layers 7
Emphysema—Atrophic 259
Compensatory 259
Cutaneous 46
Hypertrophic 259
Intestinal 259
Pulmonary 258
Emprosthotonus 28
Empyema 266
Encephalitis—Hemorrhagic 378
Suppurative 378
Endocarditis—Acute 274
Chronic 276
Enteralgia 192
Enteritis 183
Acute catarrhal 183
Chronic catarrhal 184
Diphtheric 189
Distinguished from dysentery....184
Enterocolitis—Acute 188
Ulcerative 188
Enteroptosis 183
Enteric fever 86
Enuresis 56
Nocturnal 56
Ephemeral fever 140
Epilepsy—Grand mal....329
Petit mal 329
Psychical 330
Epileptic coma 37
Epileptic convulsion 39
Epistaxis 14
Equations 14
Eruptions 43
Polymorphous 94
Erysipelas 110
Erythema 44

Page

Erythromelalgia 343
Esbach's quantitative test.... 80
Exacerbation 48
Exanthem 44
Excess function—Theories of.... 17
Excretory function 13
Exophthalmic goitre—Face of.... 61
Exostosis 47
False 71
Expansion—Deficient 77
Function 13
Unilateral 77
Expectoration—Abundant 68
Bloody 70
Green 69
Muco-purulent 69
Mucous 69
Prune juice 69
Purulent 69
Red 69
Rusty 69
Scanty 68
Viscid 69
Watery 69
Yellow 69
Eyes—Conjugate deviation of.... 62

F

Face—Abnormalities of 60
Puffiness of 61
Faintness 33
Fatty liver—By degeneration....218
By infiltration 218
Fever 58
Effect of adjustments on.... 86
Ephemeral 140
Hectic 133
Simple 48
Simple (continued) 140
Splenic enlargement in.... 88
Types of 49
Febrile—Diseases acute 86
Fecal vomiting 53
Fehling's test 82

Page

Festination gait 30
Fibrosis 258
Food poisoning 406
Formication 34
Frequent urination 56
Fullness—Sensation of.... 34
Function 15
Furuncles 45

G

Gait—Ataxic 29
Cerebellar ataxic 30
Festination 30
High-stepping 29
Spastic 29
Steppage 29
Waddling 30
Gall stones 209
Effect of 212
Gangrene—Dry 342
Of lungs 261
Gastralgia 180
Gastric fever 86
Gastritis—Acute catarrhal 167
Chronic catarrhal 169
Suppurative 168
Phlegmnous 168
Gastroptosis 182
German measles....107
Germ theory 90
Giant cell 127
Girdle sensation 34
Glenard's disease 182
Globus hystericus 333
Glossitis 155
Glottis—Spasm of 242
Glosso-labio laryngeal paralysis 351
Goitre—Exophthalmic 312
Simple 311
Gonorrhoea 144
Gonorrheal rheumatism 144
Gout 389
Gouty diathesis 27

Page

Gravel—Kidney 324
Grave's disease 312
Green sickness 299
Grip 96
Gumma—Syphilitic 146

H

Habit spasm 337
Haine's test 82
Hallucination 36
Haser's coefficient 78
Hay asthma 238
Hay fever.....238
Head—Abnormalities of 60
Headaches 32
Heat exhaustion 409
Heat of the skin..... 42
Heart 72
Dilatation of 287
Diseases of 274
Fatty degeneration 288
Fatty infiltration 288
Hypertrophy of 285
Heberden's nodosities 393
Hectic fever 59
Heller's—Heat test 79
Ring test 79
Hematemesis 52
Hemicrania 332
Hemophilia 305
Hemoptysis 52, 252
Differentiated from hematemesis 70
Hemorrhage 14
Broncho-pulmonary 252
Internal 58
Meningeal 363
Of pancreas 223
Pulmonary 133
Hematomyelia 364
Hepatic colic 210
Distinguished from renal.....211
Hepatitis—Suppurative 215

Page

Hepatization—Gray 12
Red 12
Hepatoptosis 18
Herpes—Labialis 45, 6
Nasi 4
Hippocratic countenance 6
Hodgkin's disease 30
Hospital fever 9
Hot box..... 4
Hutchinson's—Face 35
Teeth 6
Hydrocephalus 45, 38
Head of..... 6
Hydronephrosis 32
Hydropericardium 4
Hydroperitoneum 4
Hydrophobia 14
Hydrothorax 45, 26
Hyperemia 1
Hyperemia of liver—Active.....21
Passive 21
Hyperchlorhydria 17
Hyperpyrexia 4
Hypertrophic stenosis of pylorus....17
Hyperidrosis 4
Hypersecretion of gastric juice.....18
Hypertrophy of heart—
Concentric 28
Eccentric 28
Of left auricle.....28
Of left ventricle.....28
Of right ventricle 28
Of right ventricle.....28
Simple 28
Hypochlorhydria 17
Hysteria—Major 33
Minor 33
Hysterical coma 3

I

Icterus 4
Chronic 20
Gravis 4
Neonatorum 20

Page

Icterus—Continued.
Simple 203
Simplex 41
Illusion 36
Impaction of bowels 199
Incompetency—Aortic 73
Mitral 73
Pulmonary 73
Tricuspid 73
Incontinence of urine 56
Indican—Test for 79
Indicanuria 222
Infantile paralysis 354
Inflammation—Of bile ducts....205
Of gall bladder 212
Influenza 96
Cerebral form 96
Gastro-intestinal form 96
Respiratory form 96
Innate intelligence 9
Insolation 408
Intermittent pain 31
Internal hemorrhage.... 58
Intestinal obstruction 198
Intestine—Necrosis of 87
Symptoms of 53
Ulceration of 194
Intussusception 199

J

Jail fever 91
Jaundice 41
Chronic 205
Of new born....207
Simple 203
Joints 47

K

Kernig's sign 96
Kidney—Amyloid 321
Cancer of 326
Diseases of 316
Floating 316
Movable 316

Page

Prolapsis of 316
Koplik's spots 64, 108
Kyphosis 70

L

Lagrippe 96
Landry's paralysis 352
Laryngismus stridulous 241
Laryngitis—Acute catarrhal 239
Chronic 240
Spasmotic 239
Larynx—Diseases of....239
Edema of 241
Tuberculosis of 242
Lateral posture 28
Lead poisoning 402
Acute 403
Chronic 403
Leptomeningitis—Acute spinal 373
Leucoplakia buccalis 156
Leukemia 301
Liver—Abscess of 215
Amyloid 219
Cancer of 220
Carcinoma of 220
Cirrhosis of 216
Congestion of 213
Corset 201
Diseases of 201
Fatty 218
Hyperemia 213
Nutmeg 213
Prolapsis of 202
Lobar pneumonia 122
Locomotor ataxia 367
Lordosis 70, 71
Lumbago 386
Lung—Abscess of 260
Cirrhosis of 134, 256
Diseases of 250
Fever 122
Gangrene of 261
Sclerosis of.... 134
Tumor of 262

Page

Lysis 46
Lyssophobia 143

M

Macule 44
Malaria 120
Cachexia 121
Intermittent 120
Remittent 121
Malena 52
Marie's disease 344
Measles 106
Black form 107
Meningitis—Acute tuberculous 128
Basilar 128
Of brain 374
External 372
Exudative 374
Serous 374
Meningocele 362
Meningo-myelocele 362
Meres 21
Meric system 21
Metabolism 11
Migrane 332
Mind 9
Mitral—Incompetency 73, 279
Regurgitation 73
Stenosis 73, 281
Moisture of skin 43
Morphine habit 400
Motor function 13
Mouth 64
Breathing 61
Chancre of 64
Unilateral deviation of 64
Mowing gait 30
Mumps 99
Murmurs—Regurgitant 74
Stenotic 74
Myalgia 386
Myelitis 360
Central 360
Chronic 361

Page

Cortical 360
Transverse 360
Myocarditis—Acute 289
Chronic 290
Simple 289
Suppurative 289
Myomere 22
Myxedema 314

N

Nasal discharges—Bloody 63
Muco-purulent 63
Mucous 63
Ozena 63
Purulent 63
Watery 63
Necrosis—Of intestine 87
Syphilitic 147
Nephritis—Acute diffuse 319
Chronic 319
Chronic-intestinal 320
Nephrolithiasis 324
Nephroptosis 182, 316
Nervous prostration 334
Nervous system 7
Diseases of 329
Neurasthenia 334
Neuralgia 345
Cervico occipital 348
Interstitial 348
Lumbo-abdominal 347
Plantar 347
Red, of feet 343
Of sciatic nerve 34
Trifacial 349
Neuritis—Multiple 349
Peripheral 349
Ulnar 351
Neuromere 22
Neurosis—Cardiac 291
Occupation 341
Of stomach 178
Traumatic 335
Nine primary functions 12

Page

Nitric acid test 79
Nodding spasm 339
Nodes—On clavicle 146
On tibia 146
Numbness 34
Nutrition—Function of 13

O

Obesity 395
Objective symptoms 24
Occupation neurosis 341
Oesophagitis 164
Oesophagus—Cancer of 164
Dilatation of 166
Inflammation of 164
Onychia 147
Ophthalmoplegia—Progressive 358
Opisthotomus 28
Opium coma 36
Opium poisoning 401
Orchitis 100
Orthopnoea 29
Ossimere 22
Ovaritis 100
Ozena 63
Syphilitic 149

P

Pain—Acute 30
Chronic 30
Diffuse 32
Dull or aching 31
Gnawing 32
Lightening 31
Paroxysmal 31
Pallor 39
Palpitation 291
Palsy—Infantile cerebral 381
Pancreas—Carcinoma of 224
Hemorrhage of 223
Diseases of 221
Calculi of 226
Cyst of 225
Pancreatitis 221

Page

Acute 221
Chronic 223
Gangrenous 221
Hemorrhagic 221
Suppurative 221
Papule 44
Paralysis—Acute ascending 352
Agitans 340
Agitans, face of 61
Bulbar 357
Creeping 352
Glosso-labio-laryngeal 357
Of diphtheria 110
Infantile 354
Landry's 352
Pseudo-hypertrophic 353
Spastic spinal 370
Telegrapher's 341
Parkinson's disease 340
Mask 61
Parotitis 99
Parry's disease 312
Parvy's test 82
Passive posture 28
Pathology 13, 24
Peptic ulcer 171
Pericarditis—Acute fibrinous 270
Adhesive 270
Chronic adhesive 274
Hemorrhagic 273
Plastic 270
Purulent 272
Sero-fibrinous 271
With effusion 271
Pericardium—Diseases of 270
Empyema of 272
Perinephritic abscess 327
Peritoneum—Carcinoma of 232
Diseases of 227
Peritonitis—Acute diffuse 227
Acute localized 229
Chronic 231
Pertussis 97
Petechia 43

	Page
Petechial fever	95
Pharyngitis—Acute	158
Chronic	159
Pharynx—Diseases of	157
Hyperemia of	157
Inflammation of	158
Phlebosclerosis	294
Phosphates	79
Test for	81
Phthisis—Fibroid	134
Incipient	133
Laryngeal	242
Physical signs	24
Pica	50
Pimples	44
Pituitary body disease	344
Pleura—Cancer of	269
Diseases of	263
Pleurisy—Acute fibrinous	263
Adhesive	263
Chronic	267
Diaphragmatic	265
Dry	267
Encysted	265
Purulent	266
Sero-fibrinous	264
Tubercular	266
Pleurosthotonus	28
Pneumonia—Acute	122
Adult	122
Aborative	125
Bilateral	254
Catarrhal	254
Central	125
Chronic Catarrhal	139
Chronic interstitial	256
Creeping	125
Frank	122
Fibroid	256
Gastro-intestinal	126
Latent	125
Lobar	122
Lobular	254
Obstructive	125
Typhoid	125
Wandering	125
Pneumonokoniosis	257
Pneumothorax	268
Pneumonic phthisis	130
Polyarthritis—Of dengue	94
Polyomyelitis—Acute anterior	354
Posture	27
Pott's disease	70
Prancing gait	29
Precipitate in urine	80
Precordial constriction	34
Preliminary considerations	24
Primary functions defined	12
Proctitis	184
Progressive facial hemiatrophy	344
Progressive muscular atrophy	356
Propulsive gait	30
Prostatitis	144
Pseudo-leukemia	30
Pseudo-hypertrophic muscular paralysis	353
Ptomaine poisoning	407
Ptosis	62
Pulmonary congestion	250
Edema	251
Incompetency	284
Stenosis	284
Pulse—Corrigan's	76
Dierotic	88, 130
Intermittent	76
Irregular	76
Rate	75
Rate in fever	76
Shot	76
Tardy	76
Water-hammer	76
Purpura	304
Pustule	44
Pus vomit	53
Pyelitis	322
Pyemia	111
Pyer's patches—Ulceration of	86
Pyopneumothorax	268

Page

Q

Quinsy 161

R

Rachitis 393
Rash—Rose 87
Raspberry tongue 105
Raynaud's disease 342
Recurrent fever 93
Relapsing fever 93
Remission of fever 48
Renal calculi 324
  Congestion, active 316
  Congestion, passive 316
  Colic 324
  Distinguished from hepatic 326
  Distinguished from appendicitis 326
  Distinguished from cystitis 326
Reparation—Function of 13
Reproduction—Function of 13
Respiration 76
  Abnormalities of 76
  Cheyne-Stokes 77
Respiratory system—Diseases of 236
Retention of urine 56
Retropharyngeal abscess 159
Rheumatic fever—Acute 121
Rheumatism—Articular 121
  Chronic 385
  Gonorrheal 144
  Inflammatory 121
  Muscular 386
Rheumatic diathesis 27
Rhinitis—Atrophic 237
  Chronic 237
  Hypertrophic 237
Rickets 48, 393
  Head of 60
Rigid posture 28
Ring test 79
Rose cold 238
Rose rash 87

Page

Rubella 10
Rubeola 10

S

Saltatory spasm 33
Sapraemia 11
Sarcoma—Retroperitoneal 23
Scarlatina 10
Scarlet fever 10
  Angnoid form 10
Sciatica 34
Sclerosis—Amytrophic lateral 35
  Cerobro-spinal 38
  Combined 37
  Multiple 38
  Posterior spinal 36
Scoliosis 70, 7
Screw-driver teeth 6
Scurvy—Adult 30
  Infantile 30
Sensory function 1
Septicemia 11
Shaking palsy 34
Ship fever 9
Shock 5
Siderosis 25
Skin—Coldness of 4
  Eruptions of 4
  Heat of 4
  Moisture of 4
Smallpox 10
  Black 10
  Confluent 10
  Discrete 10
  Hemorrhagic 10
Somnolence 3
Spasm clonic 3
Spasms 3
Spasmodic tic with copralalia 33
Spasmus nutans 33
Spastic gait 2
Spotted fever 9
Speech scanning 6
Spinal column 7

Page

Spinal fever 95
Spinal meningitis 95
Spina bifida 362
Spinograph 84
Splanchnoptosis 182
Spleen—Diseases of 309
Proplapsis of 309
Rupture of 310
Splenic enlargement in fever 88
Splenoptosis 182, 309
Spondylitis 47
Stasis 14
Stenosis—Aortic 72, 278
Mitral 73, 281
Hypertrophic of pylorus 175
Of common bile duct 208
Pulmonary 284
Tricuspid 283
St. Vitus dance 336
Steppage gait 29
Stomatitis—Aphthous 152
Follicular 152
Gangrenous 154
Mycotic 153
Simple 151
Thrush 153
Ulcerative 152
Stools—Blood-stained 55
Black 55
Bloody 192
Clay-colored 55
Fatty 55, 192, 222
Green 55
Lienteric 192
Membranous 55
Mucous 54, 192
Purulent 192
Serous 192
Watery 192
Strabismus 62
Convergent 62
Divergent 62
Strangulation 199
Strawberry tongue 105

Page

Stricture of urethra 145
Stroke—Paralytic 375
Stupor 35
Subjective symptoms 24
Subluxation 11
Vertebral 72
Subnormal temperature 48
Sugar—Test for 81
Sulphates 79
Test for 81
Sunstroke 38, 488
Suprarenal cachexia 307
Suppression of urine 57
Sweats—Acid 121
Night 131
Syncope 33, 59
Symptomatology 24
Symptom groups 57
Syringomyelia 366
Syringomyelocele 362
Syphilitic cachexia 27
Syphilis 145
Syphilitic teeth 65

T

Tabes dorsalis 367
Tachycardia 76, 292
Tarsalgia 346
Teeth—Hutchinson's 65
Screw-driver 65
Syphilitic 65
Temperature 48
Tenderness 33
Tenesmus 115
Tetanus 141
Spasmodic 341
Tetany 341
Thermic fever 408
Thirst 51
Throat—Consumption of 242
Thrombosis of brain 377
Of lung 253
Thrush 153
Tic douloureaux 349

Page

Tingling 34
Tongue—Diseases of 155
Eczema of 156
Psoriasis of 156
Tonic spasm 38
Tonsil—Abscess of 161
Tonsilitis 160
Chronic 162
Follicular 160
Quinsy 161
Recurrent 162
Simple 160
Suppurative 161
Torticollis 338
Clonic 61
Spasmodic 61
Toxemia 111
Tubercle 127
Tubercular laryngitis 243
Distinguished from syphilitic 243
Tuberculous diathesis 26
Tuberculosis 126
Acute miliary 129
Chronic pulmonary 132
General or typhoid 127
Of bladder 137
Of cervical glands 138
Of larynx 242
Of fallopian tubes 137
Of kidney 139
Of ovaries 137
Of prostate gland 137
Of peritoneum 135
Of spine 70
Of spurarenal capsules 307
Of testicles 137
Of ureter 137
Tumor of cord 365
Tricuspid incompetency 282
Stenosis 283
Trifacial neuralgia 349
Trommer's test 82
Typhoid fever 86
Typhoid—Abortive 89

Page

Bacillus 90
Distinguished from cerebro-spinal meningitis 90
Distinguished from peritonitis 90
Distinguished from abdominal abscess 90
Grave 89
Latent 89
Status 59
Walking 89
Typhus fever 91

U

Ulcer—Of stomach 171
Distinguished from gastritis 172
Distinguished from cancer 173
Unconsciousness 35
Urates—Test for 80
Urea—Quantity of 78
Uremia 317
Uremic coma 37
Uric acid 79
Urinalysis 78
Urination—Abnormalities of 55
Urinalysis—Of acute diffuse nephritis 83
Of amyloid kidney 84
Of chronic diffuse nephritis 83
Of chronic interstitial nephritis 84
Of diabetes mellitus 84
Of diabetes insipidus 84
Of pyelitis 84
Of tuberculosis 84
Urination—Painful 55
Slow 56
Urine 78
Acidity of 78
Quantity of 78
Specific gravity of 78
Solids in 78

V

Vaccina 103
Vaccination 103

Page

Valvular areas 74
Aortic 74
Mitral 75
Pulmonary 75
Tricuspid 75
Varicella 102
Variola 100
Vasomere 22
Venous stasis 46
Vertigo 35
Vertimere 22
Vesicle 44
Viscemere 22
Vocal fremitus 77
Volvulus 199
Vomiting 51

Page

W

Waddling gait 30
Weakness 34
Weight—Sensation of 33
Whip-cord arteries 295
Whooping cough 97
Writer's cramps 341
Wryneck 338

X

Xerostoma 157
X-ray 84

Y

Yellow fever ..... 11[illegible]

Z

Zones 21

Chiropractic Symptomatology

By

James N. Firth, D. C., Ph. C.

Professor of Symptomatology
in the

Palmer School of Chiropractic
(*Chiropractic Fountain Head*)

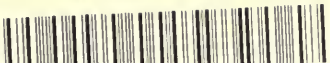
Davenport, Iowa, U. S. A.

Price $5.00

SEND ORDERS TO ABOVE ADDRESS

University of California
SOUTHERN REGIONAL LIBRARY FACILITY
405 Hilgard Avenue, Los Angeles, CA 90024-1388
Return this material to the library
from which it was borrowed.

BIOMED
BIOMED FE
BIO
MAR
BIOM
BIOMED
FEB
BIOMED


3 1158 00175 6930

UC SOUTHERN REGIONAL LIBRARY FACILITY
A 000 354 091 1

BUILDING U